Max M. Tharp

THE FARM INDEX

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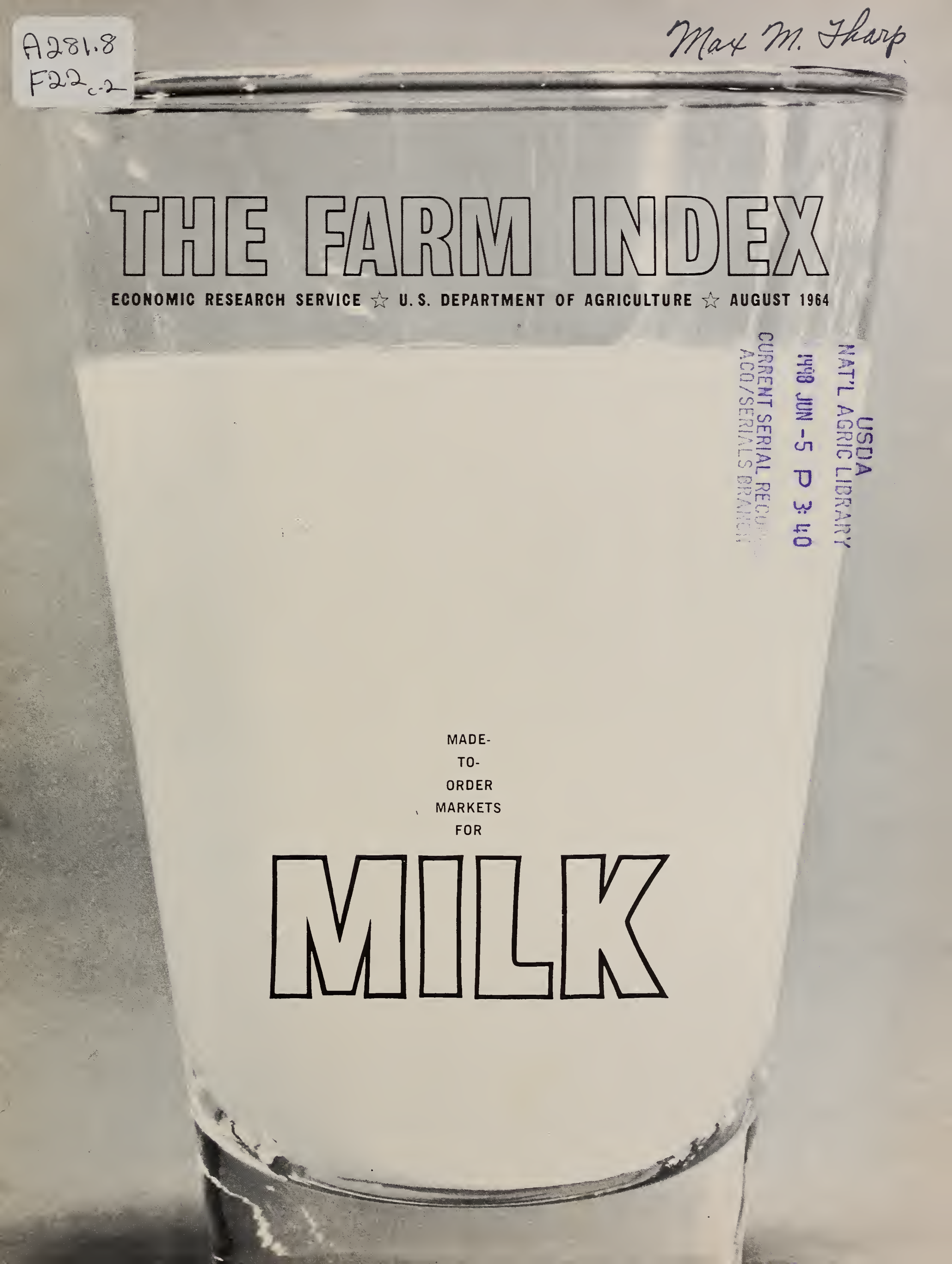


MADE-
TO-
ORDER
MARKETS
FOR

MILK

Economic Trends

ITEM	UNIT OR BASE PERIOD	'57 - '59 AVERAGE	1963		1964		
			YEAR	JUNE	APRIL	MAY	JUNE
Prices:							
Prices received by farmers	1910-14=100	242	242	241	236	235	232
Crops	1910-14=100	223	237	244	243	248	241
Livestock and products	1910-14=100	253	245	239	230	224	224
Prices paid, interest, taxes and wage rates	1910-14=100	293	312	312	314	313	313
Family living items	1910-14=100	286	298	298	300	300	300
Production items	1910-14=100	262	273	272	272	270	269
Parity ratio		83	78	77	75	75	74
Wholesale prices, all commodities	1957-59=100	—	100.3	100.3	100.3	100.1	100.1
Commodities other than farm and food	1957-59=100	—	100.7	100.7	101.1	101.1	101.0
Farm products	1957-59=100	—	95.7	94.9	94.4	93.7	93.2
Food, processed	1957-59=100	—	101.1	102.4	100.4	99.4	100.2
Consumer price index, all items [1]	1957-59=100	—	106.7	106.6	107.8	107.8	—
Food	1957-59=100	—	105.1	105.0	105.7	105.5	—
Farm Food Market Basket:[2]							
Retail cost	Dollars	1,037	1,078	1,074	1,076	1,071	—
Farm value	Dollars	410	394	390	389	391	—
Farm-retail spread	Dollars	627	684	684	687	680	—
Farmers' share of retail cost	Per cent	40	37	36	36	36	—
Farm Income:							
Volume of farm marketings	1957-59=100	100	115	95	91	88	98
Cash receipts from farm marketings	Million dollars	32,247	36,925	2,492	2,434	2,294	2,430
Crops	Million dollars	13,766	17,045	985	781	723	910
Livestock and products	Million dollars	18,481	19,880	1,507	1,653	1,571	1,520
Realized gross income [3]	Billion dollars	—	41.7	—	—	—	42.0
Farm production expenses [3]	Billion dollars	—	29.2	—	—	—	29.7
Realized net income [3]	Billion dollars	—	12.5	—	—	—	12.3
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	5,585	413	521	529	—
Agricultural imports	Million dollars	3,977	4,011	296	361	328	—
Land Values:							
Average value per acre	1957-59=100	—	—	127[4]	131[5]	—	—
Total value of farm real estate	Billion dollars	—	—	148.1[4]	150.8[5]	—	—
Gross National Product [3]	Billion dollars	456.7	583.9	577.4	—	—	618.5
Consumption [3]	Billion dollars	297.3	375.0	372.0	—	—	396.0
Investment [3]	Billion dollars	65.1	82.0	80.2	—	—	87.0
Government expenditures [3]	Billion dollars	92.4	122.6	120.9	—	—	129.5
Net exports [3]	Billion dollars	1.8	4.4	4.3	—	—	6.0
Income and Spending[6]							
Personal income, annual rate	Billion dollars	365.2	464.1	462.7	486.6	487.8	489.2
Total retail sales	Million dollars	17,105	20,536	20,486	21,392	21,743	21,746
Retail sales of food group	Million dollars	4,159	4,929	4,923	5,064	5,030	—
Employment and Wages[6]							
Total civilian employment	Millions	64.9	68.8	68.8	70.6	70.8	70.4
Agricultural	Millions	6.0	4.9	4.9	4.7	4.9	4.8
Rate of unemployment	Per cent	5.5	5.7	5.7	5.4	5.1	5.3
Workweek in manufacturing	Hours	39.8	40.4	40.5	40.7	40.7	40.9
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	2.46	2.46	2.52	2.53	2.53
Industrial Production[6]	1957-59=100	—	124	126	130	131	132
Manufacturers' Shipments and Inventories[6,7]							
Total shipments, monthly rate	Million dollars	28,736	34,774	34,942	37,167	37,318	—
Total inventories, book value end of month	Million dollars	51,158	58,807	58,706	60,531	60,413	—
Total new orders, monthly rate	Million dollars	28,374	35,036	34,425	38,184	38,099	—

[1] Beginning Jan. 1964. new ser. [2] Av. ann. quantities of farm food products based on purchases per wage-earner or clerical-worker family in 1952—estimated monthly. [3] Ann. rates seasonally adj. 2nd qr. [4] As of July 1. [5] As of Mar. 1. [6] Seasonally adj. [7] Rev. Ser.

Sources: U.S. Department of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Department of Commerce (Industry Survey, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Department of Labor (The Labor Force and Wholesale Price Index).

the agricultural outlook

Like many foreign visitors Khrushchev came here a few years ago wanting to see our cornfields. And small wonder. U.S. agriculture is the envy of the world.

One reason: Steadily gaining productivity on American farms already highly efficient—the continuing story of more and more food from less and less land. Look at the figures . . .

Since 1950, land in farms has shrunk enough to take up the equivalent of all of Iowa or Illinois. But farm output has more than kept pace with our 25 per cent gain in population.

Plantings intended for harvest this year have followed the trend, off nearly 2 million acres from last year and down more than a tenth from the 353 million in 1950 (59 crops, 48 states).

Some plantings this year have been up, others down. Here is what has happened to some of the important crops:

	Million acres planted 1963	Million acres planted 1964	Per cent change
Wheat	53.05	55.37	+4.4
Feed grains	130.53	123.57	—5.3
Soybeans	29.52	31.72	+7.5
Cotton	14.84	14.75	—0.6

Despite the reduction in land planted to crops this year, however, more acreage than in 1963 will likely be harvested. Crop losses after planting have been reduced: Crops may be harvested from 1.5 million more acres than last year. Much of the gain in harvested acreage was in winter grains, which had unusually heavy abandonment the year before.

So, the crop production outlook for this year points upward:

—More food grains, perhaps 11 per cent above last year, with larger wheat and rye crops and a record rice crop.

—More soybeans, sugar beats, sugarcane, and hay. Fall potato acreage is up slightly.

These gains will likely outstrip the cutbacks anticipated:

—Less feed grains, with corn down perhaps 5 per cent from the record high last year, oats off 8 per cent and barley 9 per cent. Sorghum acreage is down 4 per cent from last year.

—Less tobacco, beans and peas, and sweetpotatoes. Cotton acreage is down just a bit from last year.

Much of the cutback in feed grain production is attributed to farmer participation in the feed grain program this year.

But the cotton law, passed last April after much of the 1964 cotton crop had already been planted, apparently had little effect on acreage. Nevertheless, there might not be as many bales produced as last year—1963 yields were much above any previous year.

The big gain is soybean acreage this year continues a trend and testifies to the crop's substantial role in American agriculture. From relative obscurity before World War II, the crop has become the fourth leading cash crop, ranking only below wheat, corn, and cotton. Just 10 years ago, there were only about 19 million acres in soybeans.

The larger wheat production this year, 12 per cent above the 1963 crop and slightly above average, results from better growing weather and a change in the wheat program for the 1964 crop.

Hog Prices: Strong

Hog prices will likely be above 1963 levels the rest of this year and all next winter. Slaughter supplies may run 4 to 6 per cent below a year earlier into the early part of next year.

This spring's price rise came on slower than normal; pork production held up and beef output was considerably above a year earlier. Also,

unusually large cold storage holdings of pork slowed the rise. But hog slaughter has been dropping since May. Prices went up about $3 per cwt. from May to mid-July.

Last year's peak price, $18.44 (per cwt., barrows and gilts, 8 markets), came in July.

The peak this summer may not go above last year's high, but prices this fall will likely be above a year earlier and hold up much better than they did last fall. Last October-December, prices slumped to an average of under $15.

Fed Cattle Prices Gain

Fed cattle prices have recently shown strength for the first time this year.

Prices in early July were $23.33 per 100 pounds (Choice steers, Chicago). This was a gain of almost $3 from prices in early June. During the period, weekly slaughter rates were dropping from record-high levels; market weights of animals were declining; and government purchases were accounting for around 4 per cent of commercial production.

Third quarter marketings of fed cattle are expected to be up moderately from the third quarter of 1963—by about 6 per cent, according to feeders' intentions. However, this represents a drop from the first half of 1964, when marketings were up 10-11 per cent from a year earlier.

Continued price strength, particularly late in the year, depends largely on the number of cattle going into feedlots this summer. Recent price gains are probably encouraging an increase . . . There are plenty of cattle suitable for feedlot finishing, plenty of feedlot space available and feed is plentiful.

Broiler Prices Up

The broiler industry has been plagued by a long period of depressed prices . . . During the 1964 fiscal year, grower prices hovered around 14 cents a pound, about equal to the record low in calendar year 1961. And federally inspected broiler slaughter in the first half of 1964 was up 7 per cent from a year earlier.

But a recent development has brightened the price situation for the third quarter this year: Broiler chick placements and settings were reduced in May and June. This is cutting broiler output for most of the third quarter to about the year-earlier level. Broiler prices are up; through September, they will likely average above the 14.2 cents a pound for 1963's third quarter.

This price strength is stimulating an increase in numbers of chicks hatched for fourth quarter production—an increase that will likely depress prices then.

However, another development is also underway—a downward adjustment in broiler hatching-egg supply flocks. This will facilitate production cutbacks in response to any price declines.

First Half Income Wrap-up

Realized net farm income in the first half of 1964 trailed the year-earlier rate—off about 1 per cent to a seasonally adjusted annual rate of $12.3 billion. But farm numbers kept going down, so average income per farm was up slightly.

Realized gross farm income, at close to a $42 billion annual rate, was up. Cash receipts from marketings were up a little; government payments were up a lot . . . For the year, these may go 25 per cent above last year's $1.7 billion and account for about 6 per cent of 1964's cash receipts.

However, production expenses in the first half also rose, overtaking the gain in gross income. At an annual rate of $29.7 billion, expenses were up about $400 million from a year earlier.

First half cash receipts amounted to about $15.3 billion, slightly above a year earlier. Receipts from crop marketings were up about $100 million, mostly because of higher prices. However, receipts from wheat and cotton were down. Receipts from livestock marketings were mostly unchanged from the first half of 1963; increased marketings nearly offset a 5 per cent price drop.

MORE ACRES, HIGHER YIELDS PUT PACIFIC STATES OUT FRONT IN USE OF LABOR FOR FRESH AND PROCESSED VEGETABLES

Region	1939 Acres harvested	1939 Man-hours of direct labor: Total in 1,000 hrs.	1939 Man-hours of direct labor: Hours per acre	1959 Acres harvested	1959 Man-hours of direct labor: Total in 1,000 hrs.	1959 Man-hours of direct labor: Hours per acre
Northeast	630.000	73,015	115.9	562,230	49,332	87.7
Lake States	269,740	22,387	83.0	499,270	23,866	47.8
Corn Belt	378,770	31,090	82.0	290,370	20,077	69.1
Northern Plains	4,960	277	55.8	4,610	470	102.0
Appalachian	175,370	20,079	114.8	157,940	13,522	85.6
Southeast	401,390	47,437	118.2	459,330	47,537	103.5
Delta States	120,610	13,922	115.4	66,880	5,634	84.2
Southern Plains	359,480	43,694	121.5	325,690	22,697	69.7
Mountain	157,450	25,035	159.0	188,580	19,756	104.7
Pacific	583,520	90,167	154.5	879,050	105,131	119.6
United States	3,081,290	367,103	119.1	3,433,950	308,022	89.7

When the American housewife decided she preferred her peas in frozen packages instead of in the pod, she set off a minor revolution. By the time it was over, there were few farmers left who produced peas for the fresh market, and there was little need for the endless hours of hand labor that go into preparing and harvesting rows of green peas.

Instead of planting in rows, cultivating, weeding and hoeing and handpicking several times, the farmer now drills the seed and harvests his peas mechanically.

Another vote by the consumer in the market place had just the opposite effect. In the past few decades, housewives have been getting fussy about the kind of artichokes they buy. They wanted better and more uniform quality. Consequently, growers now use about four-fifths more labor per acre to grow artichokes and about one-seventh more labor to harvest them.

The difference between the two crops is about as extreme as you can get. One crop is processed, the other is retailed fresh. One is grown as a field crop, the other as a row crop. One is mechanically harvested, once over. The other is handpicked, often as many as 30 times to complete the harvest.

Mechanization has completely changed the production of some vegetables, touched others not at all, and left vegetable production, in general, still dependent on a highly variable supply of labor.

But even for the same crop, the amount of labor needed per acre can be vastly different. Take asparagus, grown in eight states for the fresh market. This prize spring vegetable required an average of 173 hours of direct labor per acre in 1959, but Oregon fields used only 98 hours per acre. Lower than average yields, largely hand snapped instead of hand cut, were responsible for the low labor requirement. In the same year, a bumper yield of asparagus in New Jersey called for bumper supplies of labor and the work ran to 258 hours per acre.

The western farmers' reliance on irrigation shows up in their use of labor in the fields. Irrigation means more time spent on leveling the field and weeding, in addition to the time spent on the irrigation itself. And with irrigation, yields go up and so does the amount of work involved in harvesting.

And yet, even with irrigation labor, the hours of work in western fields are not always higher than in nonirrigated areas. Better use of labor, mechanical or chemical weeding and the use of planes for spraying or dusting in the western states held the total input of preharvest labor down to the eastern level for about half of the fresh market crops. And growing conditions can be easier to cope with in the irrigated West where the vagaries of weather are more predictable than in the East.

For example, the sudden deluge of rain from a thundershower can send the Florida grower running to reverse the pumps and get

FRESH VEGETABLES/HANDLE WITH CARE

drainage started before his fields are hopelessly flooded. It's a problem the western grower seldom, if ever, faces.

To feed the population of the United States, about 3.5 million acres of vegetables are harvested every year, an increase of nearly a third of a million acres since 1939. But with better machines, improved technology and higher yields, the total labor input declined 59 million man-hours to 308 million by 1959. Per acre, the man-hours of labor needed dropped from 119 hours to 90 in the two decades.

The Pacific region remains the big user of labor in total. *(1)*

Heavy Labor Input Required in Growing Truck Crops for Market or Processing

Despite the fact that the total number of hours used in producing truck crops has declined, the business of growing vegetables for fresh market or processing is still a time-consuming job.

The counties of San Joaquin in California, Yakima in Washington and Marion in Oregon are all major truck crop centers. In 1959 economists in the Economic Research Service interviewed 676 farmers in these areas to determine average labor, power and material inputs on vegetable crops.

Except for plowing, other land fitting jobs and planting, many of the truck crop operations surveyed were still difficult to mechanize.

The most commonly grown crop in San Joaquin County is tomatoes. Of the 250 farmers surveyed, 156 of them were growing tomatoes for processing and 18 reported some acreage planted to tomatoes for the fresh market. Tomatoes, along with asparagus, accounted for 87 per cent of San Joaquin's vegetable acreage in 1959.

Tomato growers spent an average of 140 man-hours per acre in preharvest and harvest operations. Hoeing, thinning and irrigating used most of the preharvest labor—26 of a total 37 man-hours per acre.

Picking was the most time-consuming harvesting operation, requiring an average of 86 man-hours per acre. The rest of the 103 man-hours spent for harvesting was devoted to loading and hauling the crop.

Asparagus was the No. 1 truck crop grown in Yakima County, Washington. Growers spent an average of 12 man-hours per acre in preharvest operations, more than half of which was devoted to irrigating and cultivating. An average of 122 man-hours, most of it hand labor, was used to cut, pack and haul asparagus grown on one acre.

Marion County, Oregon, had only 10 per cent of the total vegetable acreage for the state but netted 20 per cent of total returns for vegetables in 1959. The high value of Marion County's vegetable crops—$412 per acre compared with the state average of $220—attested to the importance of the Blue Lake snapbean industry.

Snapbean growers in the area devoted an average of nearly 1,244 man-hours to the production of one acre of snapbeans. Most of the 106 man-hours spent in preharvest operations went into irrigating and setting up wire trellisses for the beans. Harvesting one acre took an average of 1,138 man-hours. Each acre was picked an average of 7.6 times over—for a total of 1,113 man-hours. Loading and hauling required an additional 25 man-hours.

The extremely high yields snapbean growers obtained from each acre compensated for their high labor requirements. Yields on the 29 snapbean farms surveyed averaged 8.61 tons per acre compared with the U.S. average of 2.3 tons per acre. Gross returns for beans ranged from $800 to $1,200 per acre harvested. *(2)*

Little Boys Lose Out

There's not much hope for small boys who claim to hate vegetables. Total production of vegetables, and fruits as well, has been on the upswing since 1950.

Output of commercial vegetables and melons increased 30 per cent from 1950 to 1962 when 22 million tons were produced.

In the fruit line, citrus output reached a record 8.6 million tons in 1961, a gain of 15 per cent over 1950. Production was down in 1962 because of freeze damage.

Production of noncitrus fruit, mostly deciduous items, went up 16 per cent from 1950 to 1962. Total output in 1962 was a record 10.3 million tons.

Six Per Cent in Ohio

Producing fruits and vegetables commercially is no small business in Ohio. These enterprises accounted for 6 per cent of total cash receipts from farm marketings in 1962.

Leading fruits produced in Ohio include apples, peaches, grapes and sour cherries. During 1962, these four brought about $12 million in returns to growers.

The farm value of Ohio-grown fresh market vegetables was around $15 million in 1962. In addition, a good many vegetables produced in the Buckeye state were processed. Farmers received roughly $14 million from this source. Tomatoes accounted for the bulk of both the fresh and processed vegetable crops.

Ever Since Eve

Apples have long been a popular fruit with Americans of all ages and sizes. So it's not surprising that the use of fresh and processed apples per person has remained around 27 pounds a year (fresh basis) since the 1950s.

However, more of the apples eaten these days are processed. The breakdown of figures on per capita apple consumption indicates that while fresh use dropped from 22.7 pounds in 1950 to 19.5 pounds in 1962, consumption of canned apple slices and applesauce gained. *(3)*

Falling Prices and Rising Costs Hit Farmers in the Corn Belt During '63

In the Corn Belt, 1963 was a year of falling livestock prices, rising production costs and higher yields for most farmers.

Net farm income on *hog-dairy farms* last year averaged about $5,071, down about 10 per cent from the $5,551 of 1962. Crop and livestock production increased almost 11 per cent but prices dropped nearly 8 per cent and higher production costs were the general rule.

The hog enterprise was affected most by the price decline. Prices received in 1963 were $2.89 less per hundredweight. On the dairy enterprises, milk production climbed to a record 155,000 pounds per farm and milk prices remained about even with 1962.

On *hog fattening-beef raising farms*, net income was about $4,130 per farm, up 8 per cent from 1962 primarily because of increased production. Hog production was nearly 12 per cent higher; total crop production rose almost 30 per cent.

Operators paid record-high prices in 1963 for the greater quantities of production inputs; total expenditures were up about $870 from the 1962 level of $6,303. Prices received in 1963 were 6 per cent lower than a year earlier as cattle prices dropped 9 per cent and hog prices declined by 8 per cent.

The largest change in income occurred on *hog-beef fattening farms* where net income declined 65 per cent from a year earlier—from $10,522 to $3,674. The major reason for this drop in income was an unfavorable spread between the prices paid for feeder cattle and prices received for fat cattle.

Farm operators paid $29.10 per hundredweight for the 1963 feeding season, an increase of $2.65 over the 1962 feeding season. But prices for fat cattle decreased from $28.45 in 1962 to $23.05 per hundredweight in 1963.

In addition to the increased costs of feeder cattle, a combination of higher prices paid for a larger quantity of production inputs contributed to an 18 per cent increase in operating expenses. Gross income also declined 8 per cent as hog prices dropped from $16.20 in 1962 to $14.95 last year.

The quantity of hogs and cattle sold rose about 8 per cent per farm between 1962 and 1963. Crop production was up nearly 5 per cent because of increased acreage of feed grains per farm.

Net farm income on *cash grain farms* averaged $14,311 last year, up almost 42 per cent from 1962. Grain sales increased substantially as crop yields averaged more than 3 per cent above a year earlier. Prices received for corn and oats remained close to 1962 levels while soybean prices rose almost 30 cents per bushel from 1962.

The trend to larger acreages and fewer livestock was evident on cash grain farms in 1963. Acreages of corn and soybeans increased while acreages of pasture, small grains and hay decreased.

Total operating expenses per farm rose from $8,854 in 1962 to $10,270 per farm last year. The increased quantities of production inputs needed for the larger production were important in boosting total operating expenses above 1962. *(4)*

Billy Goat Bonanza

Texas could claim title to a lot of sweaters. The Lone Star state was the leading producer of mohair again in 1963.

During 1963, output of mohair from Texas goats accounted for a whopping 97 per cent of the U.S. total, according to the Crop Reporting Board of USDA's Statistical Reporting Service. Output set a new record of over 29 million pounds. *(37)*

Farmers Topple Their Past Records Doing Better Job With Better Tools

The American farmworker added one more place to his dinner table last year. He produced enough farm products to supply himself and almost 30 other persons, one more than he took care of in 1962.

The farmworker broke his own record last year by making the most of what he put into farming.

Farm output per unit of input in 1963 was 10 per cent greater than in 1957-59, and 38 per cent higher than during World War II.

Total volume of farm output was 4 per cent greater in 1963 than in 1962 and 12 per cent above the 1957-59 average. Output of livestock and crops both managed to break records last year.

Since 1943, farm output has increased 40 per cent, but the volume of physical inputs used has remained about the same. However, farmers have been using more productive inputs such as machinery and fertilizer. The shift of major inputs from 1943 to 1963 is as follows: labor down 57 per cent, farm real estate up 13 per cent, mechanical power and machinery up 98 per cent, fertilizer and liming materials up 247 per cent, purchases of feed, seed, and livestock up 97 per cent, and miscellaneous inputs up 51 per cent. In total, purchased inputs rose 38 per cent.

Crops were harvested from a total of 300 million acres in 1963—5 million more than the record low of 1962 but 48 million less than a decade earlier. Much of the increase in acreage represented bigger harvests of wheat, feed grains and soybeans.

During the past decade, productivity on the American farm has stepped up at an average annual rate of 2 per cent a year. From 1943 to 1953, the increase was only 1.3 per cent in productivity. *(5)*

Here's How to figure the amount of ear corn in a crib on a shelled basis: *(6)* Multiply the volume in cubic feet by 4/9 for dry corn, 4/10 for new corn, and 4/11 for damp corn.

For a rectangular crib 18 feet long and 12 feet wide, filled with new earn corn to an average (leveled) depth of 8 feet, the calculation is:

$$4/10 \times 18 \times 12 \times 8 = 691 \text{ bushels}$$

For a round crib (volume = 0.7854 × diameter × diameter × average depth) 10 feet in diameter filled with dry ear corn to an average depth of 6.5 feet, the solution is:

$$4/9 \times 0.7854 \times 10 \times 10 \times 6.5 = 227 \text{ bushels}$$

For a more precise measure, you can deduct for the studding in the crib. The number of bushels to be deducted is equal to:

number of studs × depth × figure from table

Studs	Multiply by	
	Grain	Ear corn (shelled basis)
2 × 4 inches	0.044	0.022
2 × 6 inches	0.067	0.033
2 × 8 inches	0.089	0.044

MOVING TO SHELLED CORN? IT'S TIME TO REVIEW THE LEASE

When a landlord and tenant decide to change the way they harvest and store corn, they may also have to change the farm lease. Otherwise, costs may not be shared fairly.

And before they can rework the lease, they may need to have another look at their expenses.

The average annual production of ear corn on the farm, for example, has been 13,200 bushels. The tenant normally harvested and cribbed the crop. The landlord furnished the cribs. The costs of shelling and hauling corn to market have been shared equally.

All the expenses for harvesting and storing ear corn came to $20.32 per 100 bushels. The tenant was responsible for $11.17 of the total. The result was 55-45 cost ratio.

To work out new share arrangements for shelled corn, the two men need to list the initial investment in the new shelling and drying equipment and the new structures for the shelling and drying equipment and the new structures for the shelled corn. For the sample farm, the landlord's share of annual fixed costs, at $1,142, is almost double the tenant's investment of $621. However, the tenant incurs most of the operating costs—$7.60 per 100 bushels compared with $1.05 for the landlord. The expense of fuel and electricity for drying the corn is divided equally.

When all the costs, fixed and operating, are totaled, the tenant contributes $12.30 of the $22 per hundred bushels, $2.60 more than the landlord, and 20 cents more than a 55 per cent share of costs. In order to maintain the 55-45 cost ratio of the ear corn operation, the landlord would have to pay the tenant the 20-cent difference.

On the other hand, if the tenant and landlord wanted to share costs of field shelling and drying on the same ratio as for sharing the crop—a 50-50 arrangement—each would contribute $11 of the total cost. The tenant then would contribute $1.30 less then he did in the previous plan, the landlord $1.30 more. *(7)*

Shift From Ear Corn to Field-Shelled Calls for Drying Machinery, Metal Bins

A good many farmers are undecided about storage alternatives for corn because they are in the process of shifting from harvesting ear corn to field-shelling. While ear corn can be stored in conventional cribs, handling field-shelled corn usually means buying metal bins and drying equipment.

ERS specialists in Illinois recently figured the costs of storing ear corn in cribs, compared with the expense of using metal bins and three types of dryers for shelled corn. The latter included a portable batch dryer, an in-storage layer dryer and a batch-in-bin dryer. Costs for each method were figured for annual harvests of 4,400 bushels, 8,800 bushels, 13,200 bushels, 17,600 bushels and 22,000 bushels. The expense for drying corn was based on an average reduction in moisture content from 21 per cent down to 12 per cent.

The cost of cribbing ear corn ran from roughly 14 cents per bushel at 4,400 bushels to about 12 cents at 8,800 bushels. Generally, this method of storage wasn't practical for the larger volumes of corn.

For shelled corn, a portable batch dryer with metal bins costs from 18 cents per bushel at 8,800 bushels to about 15 cents at 22,000 bushels. This type of equipment wasn't economical for a harvest of 4,400 bushels.

Expenses for the batch-in-bin dryer ran 15 cents per bushel at 8,800 bushels and just under 14 cents at 22,000 bushels. Like the portable batch dryer with metal bins, the batch-in dryer is simply too costly for the small producer with a harvest of only 4,400 bushels of corn.

The in-storage layer dryer and metal bin combination ranged from 16 cents for 4,400 bushels down to roughly 14 cents for 22,000 bushels. *(8)*

Canadian Government Dairy Programs Like U.S. Programs in Some Respects

How are Canadian dairymen faring these days compared with their United States counterparts? Indications are that they, too, are producing more than is being consumed. The Canadian government has a number of programs for dairying, including price support, regulation of fluid markets and import controls. In some respects, these are similar to programs in effect in the U.S.A.

Canadian dairymen number nearly 400,000. Dairying ranks third in Canadian agricultural enterprises. In 1963, farm sales from dairying were $600 million, about a fifth of total cash farm income. Fluid milk output was estimated at 19.3 billion pounds last year. About 60 per cent of this total went into manufactured dairy products. Exports accounted for 3 per cent of total output during 1963.

In contrast, about 700,000 farmers in the U.S. sell milk or cream. In terms of their share of total cash farm income, dairy products rank second, accounting for 13 per cent of cash receipts from farm marketings. Farm sales of milk and cream in 1963 were worth $4.8 billion to U.S. producers. Milk output totaled 124.8 billion pounds with 50 per cent going into manufactured products last year. Exports were equivalent to 4 per cent of U.S. production of milkfat and 11 per cent of solids-not-fat production during 1963.

Canadian consumers drink more fluid milk and use more butter per capita than Americans. As a result, per capita consumption of dairy products in Canada is far above the U.S. figure. Canadians used about 900 pounds of milk and dairy foods per person (on a milk equivalent basis) in 1963, compared with the U.S. average of 632 pounds.

Canadian farmers' prices for milk used in butter and cheese are given a mandatory minimum support of 80 per cent of the previous 10-year average market price under the Farm Stabilization Act. No maximum prices are set.

Beginning in May 1963, farmers received an incentive payment of 30 cents per 100 pounds of milk used to manufacture Cheddar cheese. The Canadian government also offered a direct payment to processors who make casein powder. In addition, direct purchases of skim milk powder were made in the wholesale market.

All producers and distributors of fluid milk (and in many cases, transporters) must be licensed in Canada. This control is administered by an independent milk board in each province.

In some provinces, milk prices at different marketing levels are fixed; in others, formula pricing is applied.

Since 1962, a producer quota plan based on Class I (fluid milk) sales has been in effect in British Columbia. Producers' bases can be transferred in line with certain rules but entry of new producers is restricted. *(9)*

Large Feedlots, Big Southwest Market Boost Fed Cattle Numbers in Arizona

What has brought about the phenomenal growth of cattle feeding in Arizona? There has been a six-fold increase in the number of cattle on feed since World War II, compared with a two-fold increase for the U.S. as a whole.

The development in Arizona of large-scale feedlots, combined with the application of scientific know-how to cattle feeding, has helped to lower nonfeed costs while raising feeding efficiency.

And, compared with midwestern farmers, feedlot operators in Arizona enjoy a wider margin between the price paid for feeders and the price received for fat cattle.

Last year Arizona marketed 608,000 head of fed cattle and calves. Roughly 30 per cent of these came from seven feedlots which could feed more than 22,000 head at once. More than 75 per cent were from feedlots with a capacity of 2,500 head or more.

A large proportion—46 per cent—of the cattle entering Arizona feedlots during 1961 graded in at Medium. Only 27 per cent entered as Choice. However, feeding high concentrate rations raised many of the cattle one or two grades by the time they were ready for slaughter. About 72 per cent graded out as Choice; 25 per cent as Good.

The average price Arizona feedlot operators paid for Medium grade steers in 1957-59 was about equal to prices in Corn Belt and Northern Plains areas. But the price of Choice feeders was $2.65 less in Arizona than in the Midwest's biggest market, Chicago.

At markets in the Southwest, however, Arizona feedlot operators received nearly the same price for low Choice and high Good slaughter steers as midwestern farmers got for heavier animals carried to a higher finish.

While feed grains cost substantially more in Arizona than in the Corn Belt or Plains states, high feeding efficiency partly compensates for the difference in costs of feed. In 1960-61, it required 20 per cent fewer pounds of total digestible nutrients to produce a pound of gain in Arizona than on farms in Illinois and Minnesota.

And finally, one of the most important factors in the rapid expansion of cattle feeding in Arizona is a shift in consumer demand in the Southwest market for more fed beef, mostly low Choice and high Good grade. Per capita consumption of fed beef in the region is estimated now to be at least 50 per cent higher than the U.S. average. *(10)*

1963 COSTS AND RETURNS

Here's how costs and returns shaped up on different types of commercial farms in the United States last year.

Dairy Farms: Net incomes on five types of farms ranged from 16 per cent higher to 10 per cent lower than 1962 levels. Net returns were: central Northeast dairies, $4,068, up 16 per cent; eastern Wisconsin grade A, $5,725, down 10 per cent; eastern Wisconsin grade B, $3,128, roughly the same as a year earlier; western Wisconsin grade B, $4,640, up 4 per cent; and southeastern Minnesota dairy-hog farms, $4,358, down 2 per cent.

Milk production per cow and per farm was above that of 1962 on all five types of farms; on the farms where incomes declined it was generally the result of lower prices received for commodities sold.

Poultry Farms: Commercial egg producers in New Jersey averaged $2,008 in net income last year, 17 per cent below the 1962 level. Incomes were down because of lower egg prices and higher feed costs.

Net farm incomes on typical broiler farms in 1963 ranged from 1 per cent higher in Maine to 5 per cent lower in Georgia. Contractual payments in Maine were up last year because of increased roaster production. In Georgia, a lower farm price for broilers resulted in a decline in contractual payments.

Cotton Farms: Higher yields per acre and an improved price/cost ratio boosted net income for most cotton farmers last year. Returns in the Mississippi Delta ranged from 28 to 35 per cent above 1962 levels; in the southern Piedmont farmers' net income was 20 per cent higher than a year earlier. Net income on peanut-cotton farms in the Southern Coastal Plains averaged $5,690, a 45 per cent increase over the $3,907 average in 1962.

Returns in Texas ranged from no change to a 37 per cent increase from 1962 and in California from no change to 18 per cent higher.

Wheat Farms: Net income for all wheat farmers was down last year; returns ranged from 5 to 42 per cent below 1962. Reasons: lower prices for major commodities sold, reduced crop yields and higher production costs.

Tobacco Farms: Record yields per acre and higher prices for burley tobacco boosted net returns by 14 to 25 per cent in the Kentucky Bluegrass area. For typical tobacco-livestock farms in the inner Bluegrass area net income averaged $9,796, up 25 per cent from 1962. Tobacco-dairy farms in the intermediate sector had an average $3,238 in net income, up 15 per cent. In the outer area returns on tobacco-dairy farms were about $6,194, 14 per cent above 1962.

A slight drop in prices for flue-cured tobacco in the North Carolina Coastal Plain resulted in a 4 per cent drop in farmers' net income, $6,121 last year compared with $6,355 in 1962. Net incomes for tobacco-cotton farms remained about the same during both years: $6,440 in 1962, $6,413 in 1963.

Cattle Ranches: Favorable weather and range conditions in the Northern Plains enabled ranchers to hold the line against lower prices received for livestock. Net returns last year averaged 4 per cent higher than in 1962, $7,540 compared with $7,252.

However, cattle operators in the Southwest and Intermountain regions were hard pressed by declining livestock prices as range conditions were generally poor and feed costs high. Net income in the Southwest dropped to $5,081 last year from $8,237 a year earlier. In the Intermountain region net returns in 1963 were $9,838 compared with $11,936 in 1962.

Sheep Ranches: Higher prices and larger wool incentive payments last year contributed to a 25 per cent increase in net income for farmers in the Northern Plains. Net returns rose from $10,404 in 1962 to $12,961 in 1963. But lower prices for lambs, poor range conditions, and higher feed costs resulted in a 25 per cent drop in average net income for ranchers in the Southwest. Returns fell from $7,855 to $5,926 last year. *(11)*

Mortgage Loans in Last Quarter 1963 Up 10 Per Cent From a Year Earlier

Farm-mortgage loans made by the three principal lenders during the fourth quarter of 1963 rose 10 per cent over the amount loaned in the last quarter of '62.

Lending volume was higher for two of the major lenders in October-December 1963. Life insurance companies made about 27 per cent more loans than they did in the final quarter of 1962. Federal Land Bank loans were up 23 per cent. However, Farmers' Home Administration loans dropped 45 per cent below the final quarter of 1962 when these loans reached a high peak.

The average size of loans made by life insurance companies was up 13 per cent to $30,200 while farm-ownership loans of the FHA increased to an average of $14,500. Federal Land Bank loans rose to $15,500 in the last half of the year. *(12)*

Higher Yields and Increased Efficiency Team Up for Lower Production Costs

Cotton farmers have two basic ways of reducing production costs per acre—either increase yields or cut the costs of individual production practices. Often they could do both by using the most up-to-date technology.

Fertilization, irrigation and insect control are examples of practices which can increase yields. Although using any or all of the three is likely to increase total production costs per acre, the gain in output generally is more than enough to offset the rise in costs. The result is a cut in unit production costs.

Some practices can result in lower costs per acre while having little, if any, effect on yields. This involves the substitution of a less costly practice—like timesaving methods of land preparation or mechanical harvesting.

Although improved practices are generally studied individually, it's the combination of techniques actually used on the farm that makes the difference. For example, in cotton production trials at the Arkansas Agricultural Experiment Station, the use of irrigation increased seed cotton yields by 1,070 pounds per acre. Applications of nitrogen on other plots increased yields by 196 pounds per acre. When both irrigation and nitrogen were used, yields of seed cotton went up 1,601 pounds per acre. The complementary effect of the two practices resulted in an additional 335 pounds of seed cotton.

The production costs for a single crop like cotton also depend to some extent on the other enterprises on a farm.

In a recent study of current and improved technology on a typical large Delta farm producing cotton, rice and soybeans, modern methods applied to all phases of the operation reduced unit costs for cotton by almost 6 cents per pound of lint, while output was increased. *(13)*

ADVICE TO THE WEATHERMAN: NO DROUGHTS DURING DEPRESSION

Mention the Big Drought, and everyone figures you're talking about the Dust Bowl of the 1930s. And maybe you are. But the drought that hit the Southern Plains in the 1950s was far more severe and lasted a lot longer, though it will never get itself written into the history books.

With the price of cattle on the upswing and the entire national economy enjoying a boom, the damage inflicted by the drought of the 1950s was held within manageable limits by most of the ranchers who were living through it.

Take the cattle inventory as a measure of the effect of drought. Though the dry spell of the '30s was shorter-lived and not as severe, January 1 inventories dropped more sharply than they did during the drought of the 1950s. With cattle prices on the rise, ranchers attempted to maintain or even increase their inventories even though range feed conditions were deteriorating.

Another difference between the two droughts was in the percentage of death loss, which rose noticeably during the '30s. Death loss did rise slightly at the beginning of the drought in the '50s but then decreased.

Cattle condition, as measured by weight and rate of gain, followed a roughly similar pattern. Though cattle condition fell off during both droughts, the decline was not so sharp during the later dry spell.

The trend in net production in pounds also followed different curve lines. The long-term trend in net production in pounds has been on the upswing, except for the '30s and other periods when range feed condition decreased to any extent. And in 1951, the net production in pounds dropped off. But then it continued upward for the rest of the drought period.

The producers benefited from two decades of agricultural development and experience. Compared with the '30s, the ranchers were feeding more and better feed per animal, their insect and disease control programs were more highly developed and grazing was more evenly distributed over the range. Brush control, reseeding, deferment of range and similar practices also helped the operators withstand this latest long siege of dry weather.

The action of credit institutions, including government agencies, also helped to sustain the farmer during the drought of the '50s. Emergency drought feed programs, for example, made it easier for cattlemen to keep their breeding herds intact. *(14)*

THE MISSION: LAW FOR THE LAWLESS RIVER

They started with homemade gadgets floated down the river, and before they were through they had charted the contours of the lower Mississippi and the forces that wind a thousand miles down the river, from Cape Girardeau to the Gulf.

The small band of Army engineers, led by Captain Andrew Atkins Humphreys, set out in 1851 to find a way to control the Father of Waters. Eventually they were able to devise a formula that for the first time accurately measured water flow in the natural channels of large rivers. Their 11-year exploration of this river and the way it worked made it possible in time to protect and improve some 35,000 square miles of the Lower Mississippi Valley with a 1,600 mile barricade of levees.

As far back as 1717 there were organized attempts to curb the Mississippi. But the river time and again swept the levees away.

Disastrous floods in 1849 and 1850 focused national attention on the damage caused by the river. In the following year, the Department of the Army authorized the study conducted by Humphreys.

The problem for the Army engineers under Captain Humphreys and his assistant, Lieutenant Henry Larkin Abbot, was to develop some basic theories of the action of rivers in their natural channels.

First, the group constructed floats to gauge velocity on the surface of the river and at given depths. Later, they tried various other devices—cubes of wood suspended from cords and bottles partly filled with water and sunk in the current. Finally the engineers hit upon small open-end kegs, suspended from surface floats, that could be tracked with the help of little flags mounted on the floats.

With these hand-fashioned devices, the team of engineers was ready to begin its job.

Placing gauges at strategic points along the river, the Army group measured the river's height, the direction and force of the wind and the velocity and flow of the water. Humphreys' team also made numerous cross sections of the Mississippi and tributaries.

When Captain Humphreys, Lt. Abbot and their aides were through, they had the first accurate portrait of the anatomy of the Mississippi River complex, a water system that covers all or part of 31 states and two Canadian provinces.

Their final report, a classic of engineering literature, recommended the long line of levees that now stretches south from Cape Girardeau, though successful barricades were not built until after 1927, when the worst flood in the history of the lower valley swept over the area.

More recently, the $70 million Old River Project, only now nearing completion, has been designed to keep the main stream of the Mississippi in its place. Without the project, the ever-increasing force of the river would eventually have caused it to desert its present channel below Natchez.

The overall cost of the work on the Mississippi under the 1928 plan and amendments is estimated at around $2 billion. When completed, it will provide flood protection to more than 15,000,000 acres of land and partial protection to another 1,923,000 acres. Improved drainage will benefit another 2,700,000 acres.

Since 1928, protective works have prevented more than $6 billion in flood damage. This enormous engineering feat would not have been possible had not Captain Humphreys and Lieutenant Abbot pointed the way. *(15)*

Long-Term Planning of Water Resources Should Include Basic, Applied Research

You turn on the tap, and there's water. It's no problem. But economists in the Department of Agriculture do see a problem in that single operation. They wonder, for example, whether shortages now evident in some areas will spread and create a national water problem in the future.

They point out that one-third of the water used on watershed land goes into production of farm crops and pastures. These nonirrigated lands account for about 80 per cent of the nation's crop production and 94 per cent of its pasture production. Most likely these nonirrigated lands will remain the major source of farm production.

As farm production increases every year, it takes more and more water.

Economists note that too much water can be a problem also. For instance, water-caused erosion still plagues much farmland. Flood damage alone runs to about a billion dollars a year.

To prevent flood and erosion damage and to achieve optimum use of water, USDA economists recommend periodic examination of federal and state water policies in relation to future requirements. Because the total annual average water supply of 4.75 billion acre-feet is not distributed evenly over the country, a large part of the nation must cope with the problems of too much or too little water.

Analysis shows that 8 out of 22 water regions probably will face serious water shortages and slow economic growth unless effective steps are taken.

To help solve these problems, ERS economists suggest more comprehensive planning and management of water and related resources in the small upstream watersheds, as well as on the major river systems.

The plans should also include river system operations that are flexible in relation to future needs. Above all, the plans should include a long-term perspective and be supported by basic and applied research. *(16)*

Nation Requires Long-Range Planning To Balance Future Land, Water Needs

The U.S. has about 640 million acres of land suitable for continuous crop production and another 170 million acres suitable for occasional farming. Although the land is suitable for crops, we don't use it all because we don't need it now.

Between 1920-30, the amount of land planted to crops reached a peak of 480 million acres. The amount was relatively stable during the next two decades but has declined steadily since 1950.

We're feeding more people than ever in the U.S. and using less cropland to do the job because farm output has been increasing a little faster than population.

For the next decade or so ERS economists say the present acreage will probably be more than enough. But what about the future? Agricultural output will need to increase by roughly 175 per cent to meet the requirements of a projected population of 500 million by the year 2020.

Will crop yields and the efficiency with which livestock convert feed into meat increase faster than requirements generated by population growth, foreign trade and other factors?

These are questions that cannot be answered accurately or with certainty, yet they are strategic for policy decisions for resource development and management. We must devise land use programs that meet today's production and conservation requirements and at the same time maintain the potential for meeting the needs of the future. *(17)*

Watershed Stimulates Local Economy, Cuts Flood Damage to Crops, Roads

A good watershed program generally raises the standard of living for farmers and helps stabilize the economy of an area. Take the watershed project at Honey Creek, Iowa. Seven miles long and two miles wide, the project was designed to reduce sheet erosion, stabilize gullies and prevent sediment and flood damage. It did, too.

According to an Economic Research Service study, the project added more than $20,000 a year to local income between 1954 and 1960 by reducing flood damages to crops, roads and bridges and also by preventing gully damage and increasing production of crops and pastures.

Researchers found that more than 800 acres of pasture were improved, providing a substantial increase in forage to accommodate an increase in livestock. They also reported that an increase in the number of terrace systems reduced soil loss and helped boost corn and soybean production by close to 10 per cent.

The improvement in wildlife habitat under the watershed project stimulated more fishing and hunting in the area, too. Fishermen averaged more than a thousand visits annually to the improved ponds and streams. *(18)*

Indiana Survey Underscores Connection Between Education Level and Good Jobs

The relationship of income to the level of education stands out sharply in southern Indiana, where incomes tend to be lower than in the rest of the state.

Out of the 33 counties that make up the area, 26 counties had average family incomes of less than $5,000 for 1960. The people in the area averaged 9.3 years of school and incomes of $4,340.

By contrast, the average level

of education in seven counties in the area was 10.3 years of school. Family income averaged $5,500.

About three out of five young men who hadn't completed high school were unemployed at some time. But only a little more than one out of five high school graduates had been jobless. *(19)*

Many Older Farmers Get Tax Break Under 1964 Revenue Act Provisions

The new Tax Revenue Act has some features designed especially to benefit those who are over 65. About 1.3 million farmers and their wives are in this age group now. The number will double within the next 10 years.

The new tax law liberalizes the special tax credit against dividends and other kinds of retirement income on joint returns of couples 65 and older. The maximum 1964 income on which the credit may be applied is $2,286. (This figure will change for 1965 and thereafter.) Under the old law, the maximum was $1,524. However, the credit has been reduced from 20 per cent in 1963 to 15 per cent in 1965.

Another benefit for the older person is the provision for excluding all or part of the gain on the sale of his personal residence from capital gains tax. If the sale price is under $20,000, any profit received by the owner who is 65 and older is exempted from taxation. If the sale price exceeds $20,000, the part he can exclude is figured by dividing $20,000 by the actual sale price and multiplying this amount times the profit. However, this exclusion on the sale of property can be applied only once after the taxpayer reaches 65.

When deductions are itemized, the older taxpayer is permitted to take full credit for drugs and medicines. This also applies to anyone who pays such expenses on behalf of dependent parents 65 and older. For taxpayers under 65, the cost of drugs and medicines is still deductible only to the extent that it exceeds 1 per cent of the taxpayer's adjusted gross income.

Taxpayers 65 and over and blind are allowed an additional $100 on the minimum standard deduction of $300 for single persons and $400 for married couples filing joint returns. This means the single person over 65 with a taxable income of less than $4,000, or the married couple with less than $5,000, will be allowed minimum standard deductions of $400 and $500 respectively. *(20)*

Most Migrants in Rural Iowa Don't Move Far or Change Their Occupations

The U.S. farm population has been declining at the rate of about 750,000 a year. But even in places marked by high out-migration there's usually a counterstream of persons moving in, plus a great deal of movement within the area itself.

For the period 1950 to 1961, the Iowa Agricultural Experiment Station and Economic Research Service obtained records on the number and kinds of persons moving into and out of 457 houses located in open country areas throughout Iowa.

During the 11 years of the survey, 1,580 persons moved out of the sample homes, 1,376 moved in. Most of the moves made by migrants were for very short distances. About 42 per cent didn't even takes the persons out of their original communities, 68 per cent were within the same county and 85 per cent within Iowa.

Of all the migrants who were part of the labor force before moving, most didn't change their kind of occupations when they moved. Only 21 per cent, 163 persons, did move into different types of work. Ninety-three of these persons left farm work for other employment; 64 quit nonfarm jobs to take up farming.

The persons who moved into the open country houses to take up farming were a younger group and more likely to be married than those who moved out. The median age for nonfarm workers who shifted to farm jobs was 25 years compared with a median age of 31.2 years for farm workers who left farming.

Apparently many young families were using nonfarm work to build up some of the capital necessary for modern farming. And very likely some took advantage of opportunities to try nonfarm work first to see if they liked it better than farming.

The majority of all the persons who moved during the 11 years were part of a household group. Of the 2,956 persons migrating into and out of the sample houses, only 251 were single.

The young, unmarried persons generally moved farther than whole households. Half of the single persons who migrated crossed county lines, compared with only 41 per cent of the persons who moved as part of a household.

The unmarried persons were also more likely to change their residence classifications. Among the single persons who moved out of the sample homes, 62 per cent of those who stayed in Iowa, 91 per cent of those who moved to adjacent states and 17 per cent of those who moved farther relocated in a town or a city. *(21)*

20 Per Cent Would Quit

A recent ERS study of 51 farmers in west central Ohio showed that 20 per cent would quit farming if they could earn an annual income of $2,500 in a nonfarm job—provided they could also get a $2,500 yearly return on the value of their present farm investment.

The $5,000 was about $300 more than the farmers had earned from farming during the previous five years. *(22)*

Back in 1950 there were only 33 markets subject to federal milk orders, mostly in cities and their closer suburbs. By the end of 1962 there were 83 markets, most taking in several counties.

FEDERAL MILK MARKETING AREAS

1950 ◘ 1962 ■

A few pinpricks on the U.S. landscape in 1950, the milk marketing areas under federal orders today take in most of the nation.

A federal milk marketing order sets minimum prices that dealers in an area must pay producers for their milk. An order is established, if needed, by the Secretary of Agriculture at the request of local dairymen.

The tremendous upswing, both in number and size, of market order areas in recent years can be traced directly to the many improvements in the way milk is produced and marketed.

Then too, as the suburbs move farther and farther away from town, dairies have to supply new grocery stores in new shopping centers. The area of the marketing order has to be expanded accordingly, since, as the name implies, a marketing order covers payments to producers not on the basis of where the milk is produced but according to where it is sold.

Producers and dealers are free to cross marketing area boundaries, and in many cases it's just a matter of crossing a county line.

There is, in fact, a substantial intermarket flow of milk. Because each federal order is drawn up to meet specific conditions in a single market, the minimum prices dealers must pay producers tend to vary in different areas.

In USDA decisions, intermarket alignment is a major consideration in setting or amending minimum prices for Class I milk—the milk we drink as opposed to that going into ice cream and other manufacturing uses.

To find out how well prices are aligned among 80 marketing order areas a transportation model was constructed, based on 1961 prices, sales volumes and supplies available from producers. Using a computer, economists compared the minimum price in each order area with what it would cost a dealer to obtain milk at order prices from every one of the other 79 marketing areas.

Shipments between some markets obviously aren't practical. For instance, milk from Florida or Texas, where production costs are relatively high, couldn't be profitably shipped into the Wisconsin dairyland, where production costs—and minimum prices under the federal order—are relatively low.

But the model did show cases in which milk dealers can ship between markets and make money.

Take two cities along the Mississippi some 250 miles apart. The minimum price in city A for Class I milk in 1961 was $5.14 per hundredweight. In city B it was only $4.44. Dealers who supply city B could pay a 44-cent per hundredweight transportation charge and sell in city A at 26 cents per hundredweight less than the price paid for local milk by city A dealers.

Similarly, the computer solution showed that Class I prices in seven eastern markets were higher than midwest prices plus transportation charges to these eastern areas by 51 to 67 cents a hundredweight.

In most cases, however, the transportation model showed that the federal orders have kept up with the times. Intermarket prices are pretty well aligned. *(24)*

MADE TO ORDER MARKETS FOR MILK

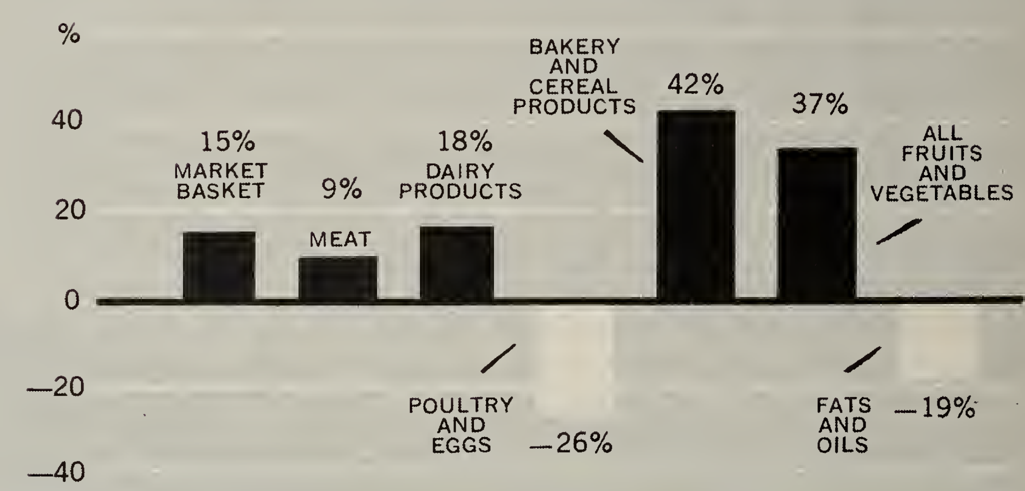
FOOD PRICES

FOOD COSTS CONSUMERS MORE THOUGH FARMERS GET LESS. Retail prices of food, excluding seafood and imports, were 15 per cent higher in 1963 than in 1947-49. How come—when farmers got 15 per cent less? The answer is a 44 per cent increase in marketing costs.

CHANGES IN FARM AND RETAIL PRICES

RETAIL PRICE RISE HASN'T HIT ALL FOOD GROUPS. Bakery and cereal products, and fruits and vegetables have each climbed around 40 per cent. But poultry and eggs, and fats and oils actually cost considerably less today than in 1947-49.

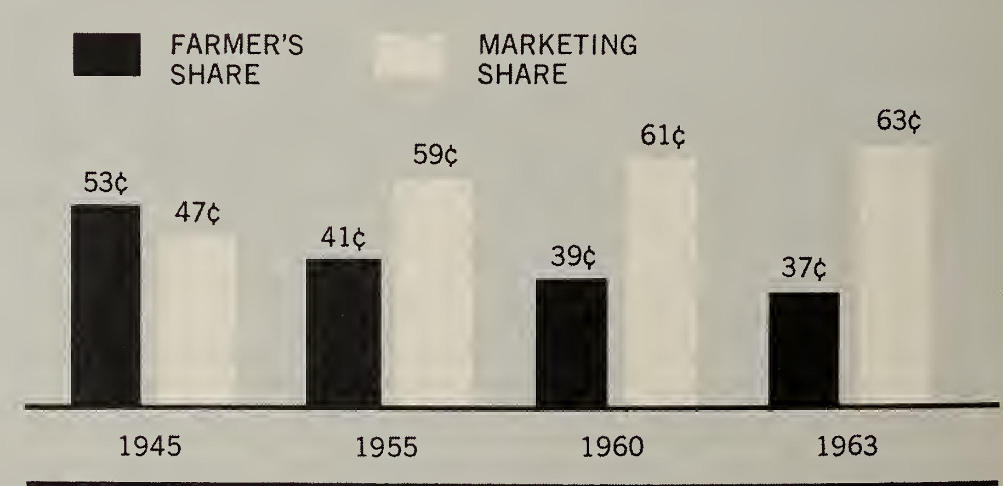
CHANGE IN RETAIL COST 1947-49 TO 1963



DATA ARE FOR MARKET BASKET OF FARM FOOD BASED ON AVERAGE OF 1952 PURCHASES OF URBAN FAMILIES

MARKETING TAKES EVER MORE OF CONSUMERS' RETAIL FOOD DOLLAR. At war's end, farmers got over half of every retail dollar. Today they receive just over one-third. The rest goes to process, package, transport and distribute the food the farmer grows.

CONSUMER'S FOOD DOLLAR



U.S. DEPARTMENT OF AGRICULTURE

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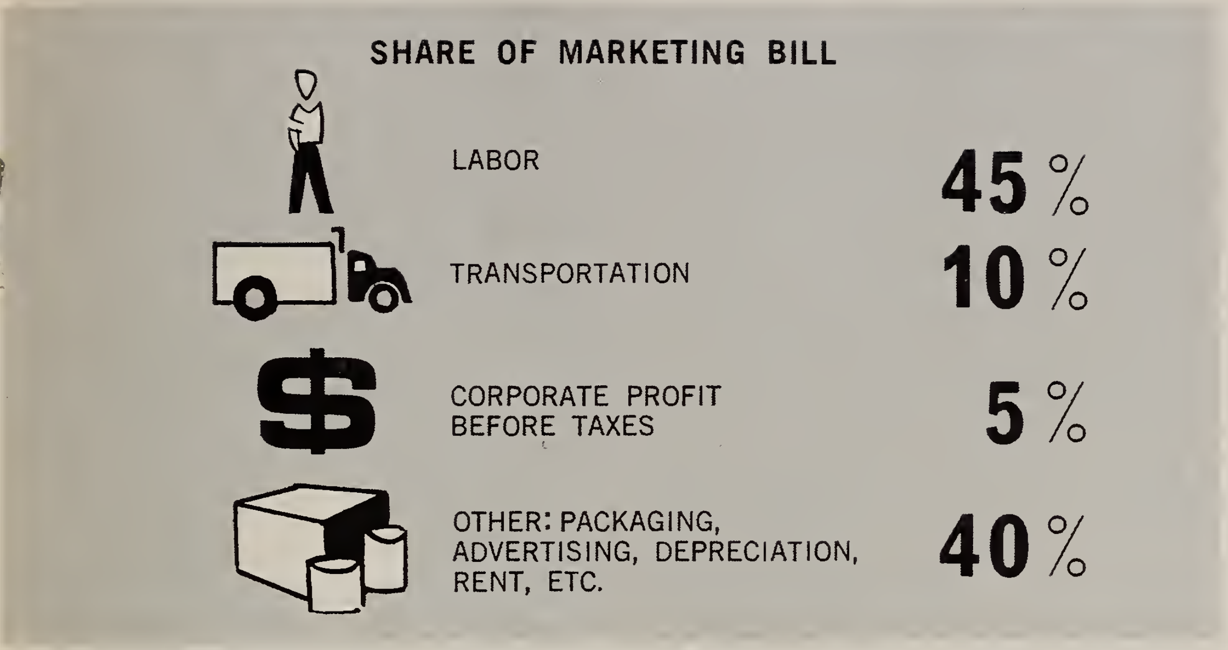
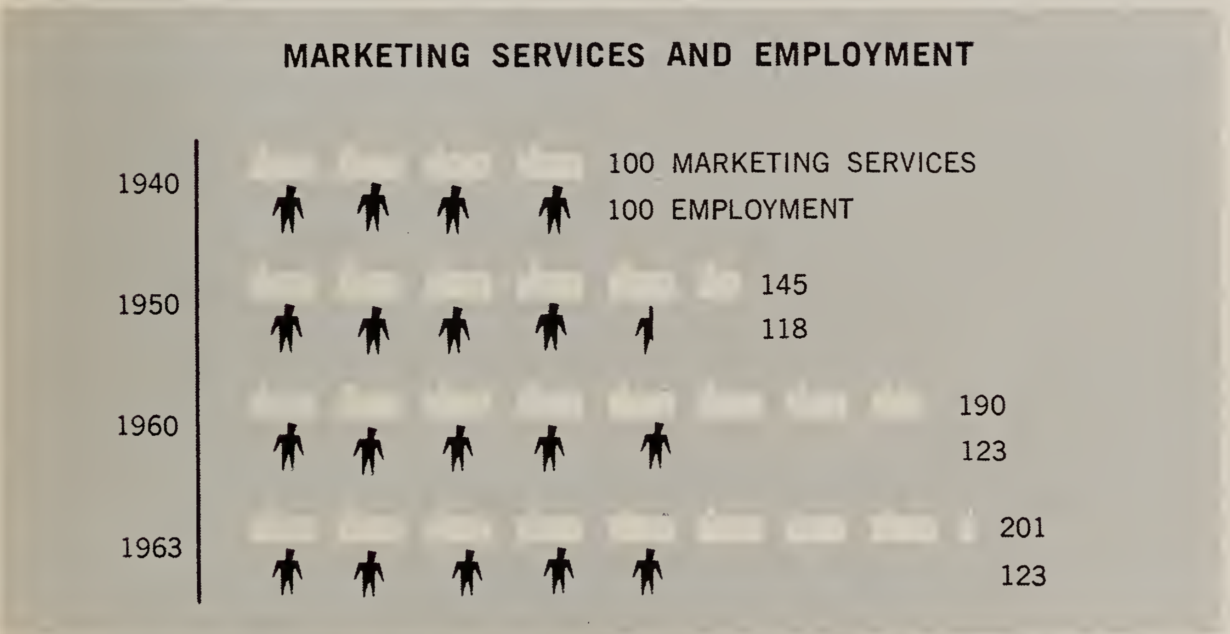
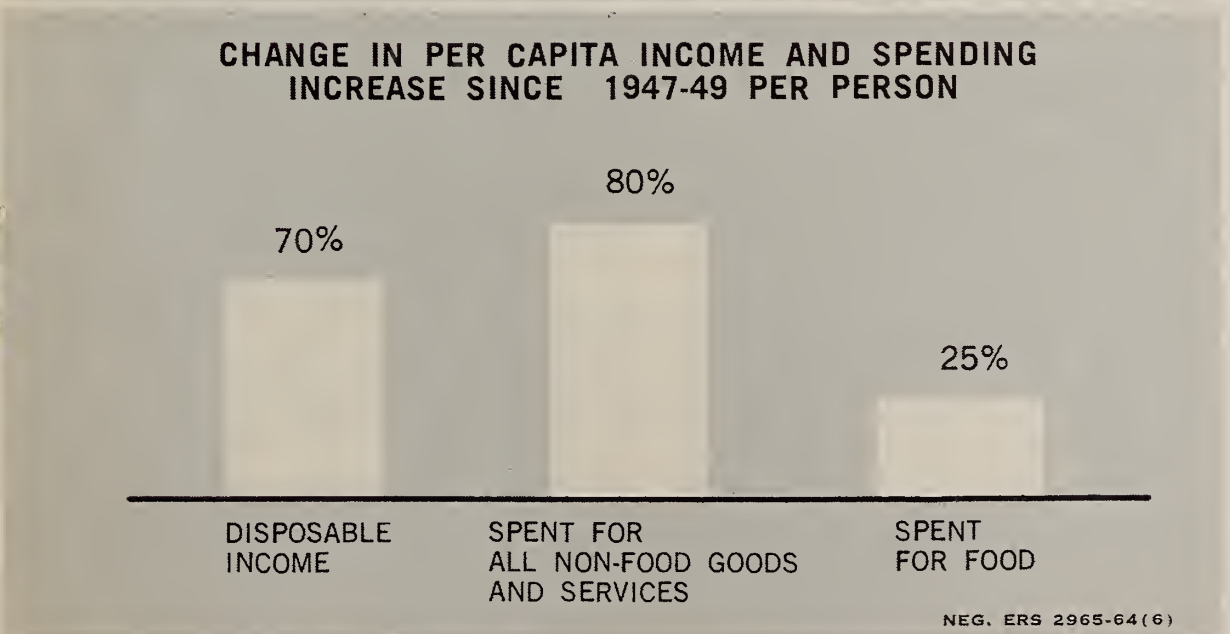


RISING COSTS ARE KEY TO MARKETING BILL. Food marketing is a giant $46 billion a year operation, employing 4.8 million workers. All costs have risen in the last 15 years, but labor costs—the biggest item—count most. Average hourly earnings, now $2.17, have doubled since 1947-49. Still workers in food processing firms don't make as much as those in manufacturing as a whole.



WORKERS EARN MORE BUT PRODUCE MORE, TOO. Retail food prices would be higher today if output per man-hour hadn't increased. While earnings have nearly doubled since 1947-49, labor costs per unit of product have gone up only 36 per cent. Marketing services have mushroomed since 1940 with a smaller increase in employment.



FOOD IS A BARGAIN DESPITE MARKETING COST INCREASES. Personal income has increased far more than food expenditures in the last 15 years. What's more, we're buying more meat and other high quality foods which would have added to the food bill even if prices hadn't risen.

Figures are for USDA's market basket of farm foods representing quantities purchased by an urban wage earner or clerical worker family in 1952.

Retailers Have New Way to Measure Impact of Promotion on Broiler Sales

How does the retailer sell more chicken when other items along the meat counter constantly compete for the consumer's dollar?

Three sales promotion techniques used in tandem show how it's done:

Give chicken more display space. Two more square feet of counter space sells 158 pounds more broilers per store.

Advertise. Each 25 square inches of newspaper linage adds 225 pounds of broiler sales.

Reduce price. A 5 cent-per-pound drop in price will sell 875 pounds more broilers.

This rule of thumb for gauging sales of chicken during weekly specials was worked out from information collected during a survey of 12 Ohio supermarkets.

The formula works best for a group of stores rather than a single outlet, assuming each store has weekly sales of $25,000 to $60,000 and a broiler volume of 1,500 to 3,400 pounds. *(25)*

TODAY'S AHAB NETS SMALL FISH TO MAKE LOW COST MARINE OILS

If the fish aren't biting it costs the paint and varnish industry more than usual to manufacture its products.

What's the connection? It's a boney fish too oily to eat, weighing less than a pound, measuring less than a foot. This is the *menhaden*, the principal U.S. source of the marine oils used as drying agents in paints and varnishes.

Marine oils mixed with raw linseed oil are used in exterior house paints. They're used also in barn and roof paints, rust-proof coatings and undercoat paints. In varnish, bodied fish oil is combined with tung oil, a use that will probably increase because the cost of fish oil is well under that of tung oil.

Marine oils, along with the fish meal that's produced at the same time, are used on a much smaller scale in livestock and poultry feeds and other products.

While marine oils account for less than 3 per cent of U.S. output of fats and oils, they are low cost competitors of such farm-derived products as soybean, linseed, castor, tung and tall oils.

Now that vitamins A and D are produced synthetically, another type of marine oil popular 30 years ago—the medicinal oil such as cod liver oil—has all but vanished.

Last year menhaden accounted for 90 per cent of all marine oil produced in this country. But the menhaden, which mostly swims the shoreline waters along the Atlantic and Gulf coasts, weren't biting last year. More specifically, the big schools weren't around to be netted by commercial fishing fleets.

As a result, marine oil production dropped sharply from a high of 266 million pounds in 1961 to 186 million in 1963.

Marine oil prices rose accordingly, from 4 cents a pound (Baltimore) in January 1963 to 8.5 cents in April 1964. This year the price will probably drop back if the catch is better.

At 4 to 5 cents a pound, fish oil is one of the lowest priced oils on world markets. While manufacturers like the quality finish the marine oils give paint and varnish, it's basically price that gives fish a competitive edge over soybean, linseed and other drying oils, both at home and abroad.

The U.S. is a net exporter of marine oils, selling menhaden and buying whale sperm oil which is used as a lubricant in fine precision instruments.

This favorable export position is relatively new. Up until 1950 we were a net importer. *(26)*

Processed Use of Noncitrus Fruit Up; Increased Output Needed in 1964-65

Highlights in the fruit economy at the start of the season for processing the 1964 noncitrus crop:

—Increases of about 10 to 15 per cent over the 1963-64 packs of 13 canned fruits (the equivalent of 89 million cases of 24 No. 2½ cans) and frozen fruits (620 million pounds) are needed to provide sufficient supplies for domestic consumption and exports in 1964-65, as well as for an adequate carryover.

—Consumer demand for processed fruits is strong, with per capita consumption estimated at 55 pounds last year.

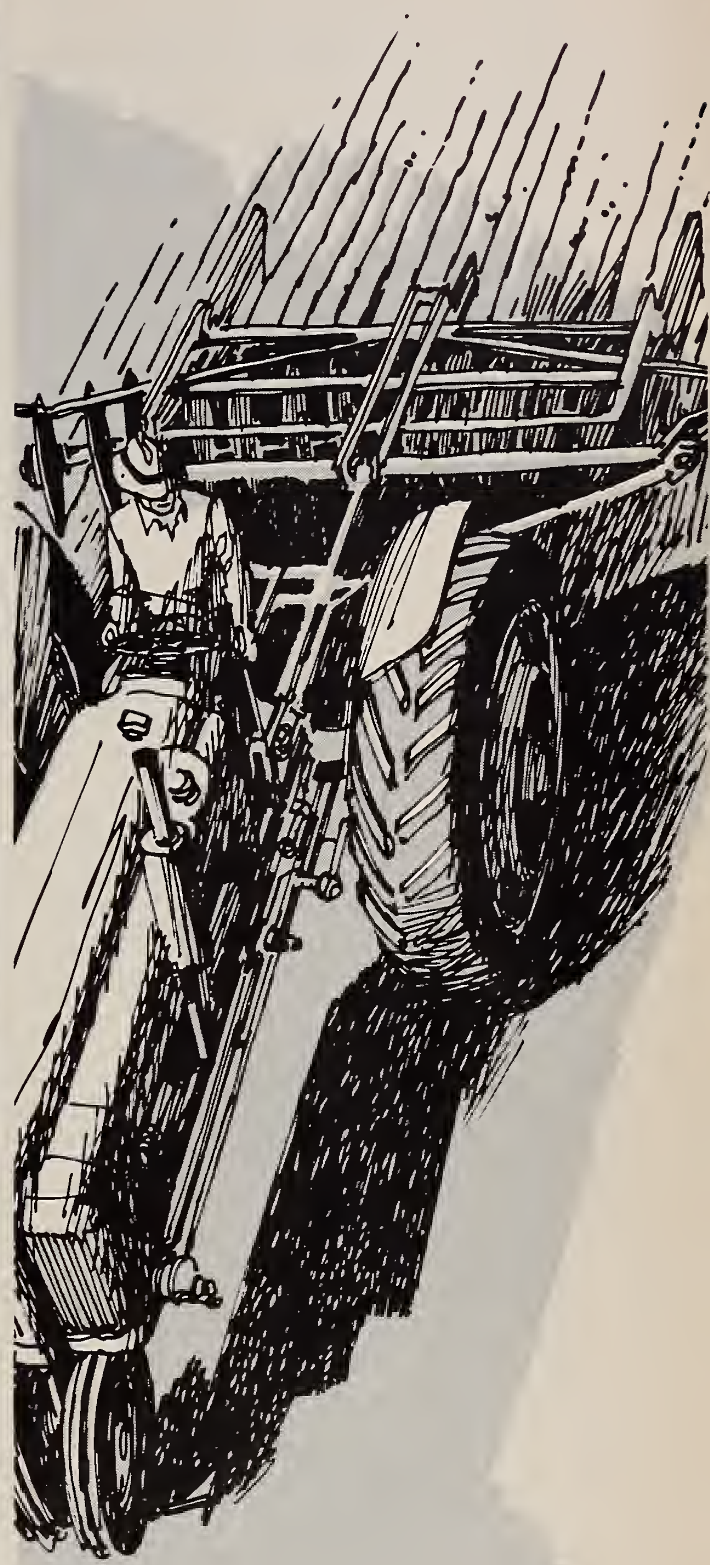
—Canners' and freezers' stocks of processed noncitrus fruits are well below levels a year ago, but a heavier 1964 crop of fruits regularly canned and frozen in large quantities is in prospect.

—At present, retail prices for processed items are generally up from year earlier levels, mainly because of higher prices paid for 1963 crop fruits and increased costs of packing and handling.

The shift in emphasis from fresh use to processing was apparent in the disposal of last year's noncitrus crop. Processing accounted for 61 per cent of the 10.4 million ton crop; only 37.8 per cent was marketed fresh.

Well over half of the apples and plums sold in 1963 still went to the fresh market but processing accounted for the major part of sales of peaches, pears, apricots, prunes and sweet and tart cherries.

Exports of canned peaches, fruit cocktail and pineapple have risen in recent years with particular strength in West European and Canadian markets. During June-April of the 1963-64 marketing season, the U.S. exported 4.6 million cases of peaches, 2.8 million cases of fruit cocktail and 1.9 million cases of pineapple. *(27)*



the SPANISH Renaissance

Spain, like the United Kingdom, has had its bid for membership turned down by Europe's most exclusive club—the six-member Common Market.

Among other advantages, the membership denied last May would have put Spain inside the protective wall of the Market's common agricultural policy.

Launched in mid-1962, this policy within the next few years is expected to wipe out all barriers to trade in farm products among member countries.

For Spain this would have meant free access to its most important markets for its most important exports.

Sales of farm products to these countries is what keeps the Spanish economy afloat. Madrid depends on farm exports for 50 to 65 per cent of its foreign exchange earnings yearly.

Top exports are fruits and vegetables, wine, olives and olive oil. Top customers, up to now, have been the Common Market, the United Kingdom and the United States.

Last January, before its Common Market bid was rejected, Spain began a four-year economic expansion program that will cost $5.6 billion. Some $1.1 billion is earmarked for agriculture, chiefly to expand production of export crops.

The plan calls for citrus production to increase some 2 million tons by 1967; oranges are the biggest single foreign exchange earner. Production of other fruits is expected to increase by 2.9 million tons, olive oil by 500,000 tons.

At the same time, irrigation projects, consolidation of small farms and the addition of 100,000 new tractors, twice the present number, should raise productivity enough to release 340,000 farm workers to take jobs in industry.

Higher output of cash crops, plus the higher per capita income generated by industrial jobs, points to Spain as an up-and-coming dollar market for U.S. goods, including some farm products.

Encouraging too, is the fact that Spain has liberalized trade restrictions on some 75 per cent of farm imports since 1959 when it devalued the peseta.

Both actions have helped to stimulate the economy. Compared with a critically low $66 million in 1958, Spain's foreign exchange holdings stand today at $1,210 million, the highest level in Spain's history.

In sum, Spain has the money to buy U.S. goods. It's not behind the Common Market's high external tariff wall, a decided advantage to U.S. exporters. And it's going to need more of some farm imports as population and consumer income increase.

The outlook for U.S. feedgrain exports is particularly good. Spain's per capita consumption of meat hovered around the pre-Civil War level of 27 pounds a year until 1956; by 1961 it had jumped to 42 pounds. However, Spain still has one of the lowest levels of meat consumption in Western Europe.

The government plans marked increases in livestock production. But Spain has never been able to produce enough feed grain, and the gap will widen as livestock numbers multiply.

Despite the market potential in Spain, U.S. exporters will have to overcome special advantages enjoyed by other suppliers.

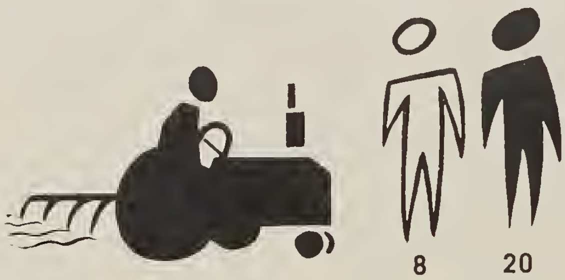
Among these are lower production and transportation costs and custom packaging for the Spanish consumer.

U.S. exports of cotton to Spain have declined rapidly in the last few years, primarily because Spain is producing more of its own cotton. Chances of increasing our exports of soybean oil aren't too good because the Spanish government is regulating its use. The United States will continue to export wheat, but only in years when Spanish output is below normal. *(28)*

THE 3 MARKETS OF LATIN AMERICA

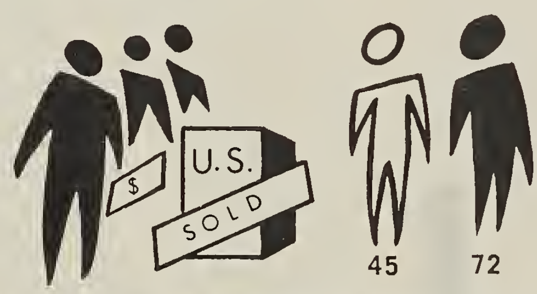
Today some 68 million people in the 20 Latin American republics can afford to buy food regularly in the commercial market place. U.S. farmers can look for sales south of the border to jump significantly by 1975 as this group swells to over 100 million people.

RURAL MIDDLE CLASS AND WELL-TO-DO



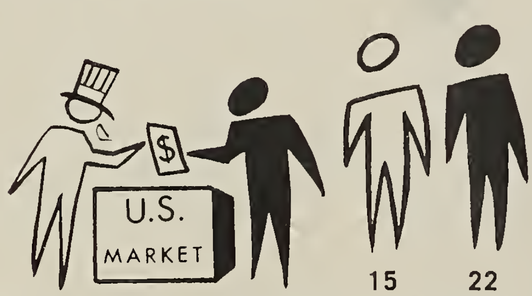
With better farming methods and crop yields, some rural poor will earn enough to move into the market economy. The rural commercial market will expand too, as more people work in crafts and service enterprises in rural villages.

URBAN MIDDLE CLASS



With more jobs in an expanding economy, some urban poor will escape their shanty town life, becoming part of an estimated 27 million increase in the middle class population. Less affluent than ours, Latin America's middle class is still the best bet for expanding sales of U.S. farm products. Part of this market too, are live-in servants who eat from their employer's pantry.

URBAN WELL-TO-DO



The very wealthy in Latin America are the very few. But foreign residents, including diplomats, offer U.S. exporters a market that's expected to grow by 7 million people.

. . . AND THE 2 SHADOW MARKETS

The ranks of Latin America's poor may grow from 150 to nearly 200 million by 1975. Some way to feed this roughly two-thirds of the population that may yet be living outside the market economy has to be worked into programs to increase farm output and improve marketing systems in Latin American countries. *(29)*

RURAL POOR

Today nearly half of all Latin Americans grow what they eat and do their marketing in nearby villages. Despite the region's fast growing population, the number of rural poor may be expected to decline by 1975.

URBAN POOR

Most rural migrants will join the urban poor. Before U.S. food aid, the plight of these people was desperate. Many still forage in the streets for food. These millions are the greatest challenge to country programs for increasing agricultural production and to U.S. programs of food distribution.

1962 1975
MILLIONS OF PEOPLE

POPULATION FIGURES ARE ROUGH ESTIMATES ONLY

U.S. DEPARTMENT OF AGRICULTURE

NEG. ERS 2966-64(6)

Farm Trade Closes Out Fiscal Year With Three-Way Record on the Books

The good news last June was that the nation's farm exports were expected to reach an alltime high of $6 billion when the final report was in for the fiscal year.

Now it looks like there will be a bonus of an extra $100 million topping the export record before it could even be posted.

At the June estimate of $6,115 million, farm exports for the year ending June 30 this year were 20 per cent above the $5,078 million mark set in the previous year.

Wheat and flour, cotton, feed grains and soybeans led in the increase of U.S. exports. The export figure also got a boost from stepped-up shipments of rice, tobacco, tallow, lard, dairy products and meat.

Only fruits, vegetables and vegetable oils registered declines and they were relatively modest.

Adding further cheer to the export story was the figure on dollar sales, another record for the year at $4,600 million. Dollar exports are expected to run $1 billion above the record $3,600 million set in 1963. The increase in total exports was practially all in dollar sales.

To round out the report, the balance of farm exports over imports is expected to be around $2 billion, highest in the half century of available information.

A number of factors contributed to the $1 billion gain in 1964 agricultural exports. Principal ones were U.S. efforts to increase trade abroad, healthier economies in Western Europe and Japan, expanding populations, upgraded diets, better quality of U.S. exports, competitive pricing and improved service to exporters.

Inflation in Western Europe also helped ease sales of U.S. products.

The poor harvest in the Soviet Union and Western Europe played the biggest part in increasing U.S. exports of wheat and flour.

Exports of feed grains were encouraged by expansion of the West European and Japanese livestock industries.

Cotton benefited from: changes to permit sales from Commodity Credit Corporation stocks at competitive prices; slight decline in free world production during the 1963 season; and relatively small world stocks.

With a rapid increase in disposable incomes, consumers in Western Europe and Japan were upgrading their diets in 1964 and adding a greater variety of foods, especially livestock products.

Most of these industrialized countries are encouraging production of meat, poultry and dairy products, importing such raw materials of production as feed grains, soybeans and protein meal. But they also imported somewhat larger amounts of meat and other livestock products.

Exports are important to all U.S. agriculture and a prime outlet for certain commodities. About three-fourths of U.S. wheat production was sold abroad in fiscal year 1964, two-thirds of the rice and nonfat dry milk and half of the dry edible peas. *(30)*

Foreign Spotlight

COMMON MARKET. In June the Council of Ministers suspended until December efforts to reach agreement among the Six on a common price for grain. Whether the community will adopt a high price, near the German level, or a relative low price near the French, has been of prime interest to the United States and other grain exporters. A high price would, of course, discourage imports from nonmembers, a low price encourage them. Where the grain price is finally pegged may well indicate how the Market's common agricultural policy will affect U.S. sales of other farm products to Western Europe.

INDONESIA. Last September Djakarta severed relations with the new nation of Malaysia, cutting off Singapore as processor and middleman-to-the-world for Indonesia's vital rubber crop. Officials said rubber would be sent instead to the Philippines for processing. However, the Philippines are short of processing facilities. Recent reports indicate that despite an embargo on direct trade, much of Indonesia's rubber is finding its way back to Singapore, via Japan and Hong Kong. Volume entering Singapore in a single *week* was 11,000 tons, about one-third the normal *monthly* imports before the diplomatic break.

WHEAT OUTLOOK. Chances are the Soviets won't be shopping for much wheat in world markets this year. After last year's disaster in the Virgin Lands, wheat and other small grains are doing better throughout Russia this year. In Western Europe it looks like a near record crop. Mexico expects its biggest harvest ever. Seeding conditions are very good in Argentina and Australia. Only Canada, among major producers, anticipates a smaller crop this year. *(31)*

Pilot Food Stamp Program aids needy, but with retail sales up the program has also put its

STAMP ON THE TRADE

"Test the water before you leap" is an adage the Pilot Food Stamp Program has used to advantage.

The program was launched three years ago in just eight pilot areas. All but one were economically depressed counties, ranging from Fayette County, Pennsylvania, and McDowell County, West Virginia—both in Appalachia—to Silver Bow County in Montana. The one city was Detroit.

Studies in a number of pilot areas have shown repeatedly that the 3-year-old program really works. Today it operates in 40 counties, plus three cities in 22 states.

By March this year over 392,000 people were participating in the program nationwide. They received nearly $6.5 million in food coupons in this one month alone. Of this amount the participants paid $3.9 million. The other $2.6 million, or 40 per cent of the total, represented free coupons—and free food.

Participants use the coupons as they would cash to buy food at prevailing prices in any grocery store they choose.

The only prohibited items are tobacco products and alcoholic beverages, plus coffee, tea, cocoa, bananas and other imported foods that can be so identified.

The Stamp Program has helped local businesses, too. Retail grocers, even wholesalers, in these depressed areas have had sales go up considerably since the plan began.

Take Avoyelles Parish, a rural county in the Louisiana midlands, where farming is the major industry and there's a chronic labor surplus.

ERS economists checked sales in 73 grocery stores for a four-week period in January-February 1963, before the stamp plan was started in Avoyelles Parish, and a similar period in June-July, after the plan was in operation for about four months.

Some $45,000 in food coupons, representing about 9 per cent of total retail food sales, were redeemed in the parish during the four-week program survey period.

Researchers found sales were 13.6 per cent higher in June-July than in January-February.

About half of this increase was traced to seasonal factors—more jobs and more income during the summer than the winter months.

Records show that while nearly 10 per cent of the total labor force in Avoyelles Parish was unemployed in January-February, less than 7 per cent was still looking for work in June-July.

But even after adjusting for this seasonal difference, ERS researchers found about half the 13.6 per cent increase in sales was due to the Food Stamp Program.

During the first seven months the stamp plan operated in Avoyelles Parish, over 18 per cent of the 38,000 population participated. *(32)*

Nation Eats More Rice Despite Shift Away From Many Other Starchy Foods

Almost alone among cereal grain products rice is more popular than ever.

We ate more rice in the 1961-62 marketing year, 7 pounds per person, than we did in 1956-57 when consumption was 5.8 pounds per person.

This is about a 21 per cent increase.

Top rice user on a per capita basis in 1961-62 was Hawaii where residents consumed 113 pounds apiece. Next in line were Louisiana, 30 pounds; South Dakota, 27 pounds; and California, 10 pounds.

On the other hand, 37 states still had a consumption rate in 1961-62 below the national average. True, these 37 states distributed 25 per cent more rice per year than they did in 1956-57; since population increased only 6 per cent, this represents a marked increase in per capita use. But these states are markets that could expand considerably if more people got into the rice-eating habit.

These are highlights of an ERS study of rice distribution patterns, conducted in cooperation with the rice industry.

Several years ago the industry launched a nationwide program to stimulate sales. The program included (1) more advertising and other promotion techniques; and (2) education of consumers in low-consuming areas on the use and preparation of rice dishes.

The purpose of the ERS study was to establish benchmarks for marketing decisions as well as to evaluate how well the program worked. Judging from the 21 per cent increase in per capita consumption in the five years from 1956-57 to 1961-62, it worked well indeed.

Government distribution of rice through school lunch and public welfare programs increased substantially during the 5-year study period. Although most of the consumption gains came from industry sales in the marketplace, school lunch and other public distribution could have a positive influence on future rice sales. For example, children who might not otherwise become acquainted with it are served rice in school lunches at a time when their eating habits are still unformed. *(33)*

Merlin Would Like Wurlan, Added Magic That Makes Wool Truly Wash and Wear

There's *Wurlan* in your future. Wurlan is a new process that makes all-wool clothing machine washable. You'll see it in wool skirts, sweaters, slacks, socks, even blankets.

If the tag says it's *Wurlanized*, it means the all-wool garment can be tossed into the automatic washer—and dryer—with the rest of the family wash. No more warm water, short cycle, special detergent pampering that today's washable wools require.

Wurlan was developed by the Western Research Laboratory of USDA's Agricultural Research Service.

Applied to wool yarn or fabric, it forms a web-like film around the fibers, preventing shrinkage. The wool retains its warmth, luxurious feeling, rich appearance, wearability and other traits that have long made it our favorite winter wear.

Wurlanizing simply insulates the wool from the effects of washday appliances.

Clothing buyers in 40 firms that operate some 3,300 retail outlets were recently asked by ERS researchers to estimate the market potential for Wurlanized wool.

Most buyers hadn't heard of the new wool. But one look at samples and they saw the merchandising possibilities Wurlan offered.

For example, 23 of 30 retailers who commented on one item—ladies skirts—said they would like to sell almost all of their 100 per cent wool skirts with a "machine launderable" label. It would be a strong selling point, they thought, especially among college girls and secretaries.

Based on 1962 wool use patterns, Wurlan had a place in 131 million of the 394 million pounds of wool going into consumer products.

Thus, almost one-third of the wool used in clothing needs Wurlan. Of course, many types of all-wool clothing don't need this special treatment. For those that do, retailers have helped show the way to a new market opportunity for wool.

So watch for the Wurlan label if you're looking for fully washable wool. *(34)*

Housewives Get a Bargain in Terms of Meatpackers' Services for Fresh Pork

When a housewife buys a pound of pork roast, she's actually paying very little for meatpacking services, about 3½ cents, or 6 per cent of the retail price for fresh pork (59 cents a pound during fall and winter 1962-63). This 3½ cents represents packers' services for slaughtering hogs, cutting pork carcasses, packaging, shipping and delivery to retailers.

Whether center-cut chops at about $1.00 per pound or pork roast at about 40 cents, each pound of fresh pork in the retailers' meat display will have incurred the same average cost for these packers' services.

Packers furnish additional services for cured and smoked pork products. Thus, cost for packers' services is less for pork chops (sold fresh) than for hams, picnics and bacon. For these latter products, packers incur additional 7 to 15 cents per pound costs for curing, smoking, wrapping and slicing.

In the fall and winter of 1962-63, when these cost surveys were made, live pork prices dropped sharply. The meatpackers' costs for enough live hogs to produce 100 pounds of carcass went down $2.96. Naturally, selling prices declined too, but only by $2.77. This means the packers' margin widened by one-fifth cent per pound of pork sold at wholesale.

An increase of 14 per cent in volume of pork handled during these months did not increase meatpackers' costs per pound of pork. There was no change in direct variable in-plant costs, buying and selling, or killing and cutting room expenses. There was a 6 per cent decrease in shipping and delivery costs.

Differences in fresh pork costs showed some relation to the size of meatpacking operations. In general, the largest plants showed higher than average costs for brokerage fees and packaging, lower than average costs for plant and administrative costs and buying and selling.

Of the farm-wholesale spread for fresh pork, averaging 11.6 cents in the fall and winter 1962-63, cost for services furnished by meatpackers amounted to about one-third. Other costs, not measured in this study, included hauling hogs from farms to markets, selling live hogs and transporting fresh pork to distribution centers. *(35)*

CONSUMERS PROFIT FROM MEATPACKERS' LOWER COSTS FOR FRESH PORK

Function	Costs per wholesale pound	
	Fall 1962	Winter 1963
	Cents	
Buying hogs	0.14	0.14
Dressing and packaging	2.72	2.70
Shipping dressed pork	0.25	0.20
Selling	0.29	0.30
Packers' costs for fresh pork	3.40	3.34
Distribution to retailers	0.25	0.27
Packers' total costs	3.65	3.61

For a year ending in June 1963, a team of marketing specialists from the Economic Research Service directed the collection of food prices in a sample of retail stores in Greensboro and Burlington, North Carolina.

The group recorded prices for 260 different food items twice weekly in 32 stores. Twenty-seven of the stores were in Greensboro, a city of over 123,000 persons. The others were in the next county in Burlington, a rurally oriented city with a population of 33,000.

Shopping facilities in these two neighboring communities typify stores in similar cities across the nation.

The study was an attempt to measure the way different types of food stores price their wares. The project included size of stores and type of ownership—chain, affiliate or independent. It also covered the relationship between

prices and the variety of foods offered in a given store and the number of services provided the customer. (See "Superabundance in the Supermarket," Farm INDEX, October 1963, and "Today's Food Store: The Superservant," Farm INDEX, April 1964.)

SIZE OF SAMPLE: The figures in the following stories are based on a limited, preliminary appraisal of data from only three months of the one-year study period. The prices used are from 11 of the 32 stores in the total study. Seven of the stores were chains—local, regional or national. The other four stores were managed by their owners, either as independents or as affiliates which, as a group, buy from the same wholesale firm.

SIZE OF STORES: Eight of the 11 stores were supermarkets (more than 6,000 square feet of sales area) and three were superettes or small neighborhood stores.

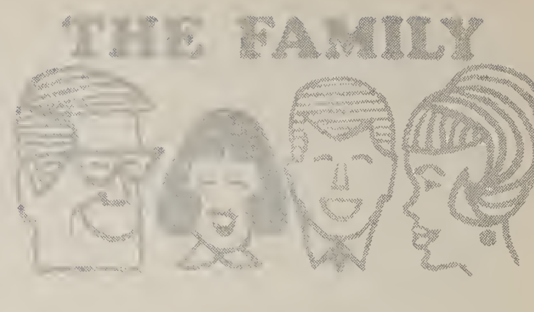
FOOD COSTS: For these comparisons, prices from the Greensboro-Burlington study were applied to a market basket of foods to show

the total impact of the higher and lower priced items on a weekly food bill.

The quantities in the basket are sufficient for all meals for a week, either at home or carried as lunches from the home supply. Meals eaten away from home would reduce the amount of food in the market basket and change the costs presented in this analysis.

THE FAMILY: The hypothetical family around which all but one of these comparisons were developed consists of a young husband and wife and their two preteenage children.

PRICE COMPARISONS: As far as possible, prices of identical and widely distributed items of food were used in figuring total costs for the market basket in the different stores. An example of an item would be a 48-ounce can of a specific brand of shortening. A different brand, in the same size



can, would be another item as would the same brand in a different size. Similarly, round steak and ground beef are two items.

For most of these comparisons, the market basket cost represents what it would take to buy the same quantities of the same food in each of the 11 stores during the same three-month period.

A wider variety of brands was included only when comparisons were made in cost differences due to shopping around for the lowest prices in the neighborhood stores. In such appraisals, the quantities and foods in the market basket remained the same as in other comparisons but the brands varied from store to store.

FOOD PLANS: Most of the comparisons were based on quantities of food included in the USDA moderate cost food plans. These quantities will provide nutritionally adequate meals for a week for

persons in different age groups. They are based on the assumption that the choices of individual items of foods will follow average patterns as shown by studies on family usage.

Average costs for the U.S. of these food plans are published four times a year by the Consumer and Food Economics Research Division of the Agricultural Research Service in "The Family Economics Review." *(36)*

ABC

The wise shopper
can turn the ABUNDANCE of today's food store
into a BARGAIN for her family
by keeping a sharp eye
on the COST of the food she buys,
according to ERS's year-long study of . . .

THE ABC'S OF BUYING

Our average housewife could take her pick of several supermarkets or superettes, all within the shopping neighborhood. In one of the supermarkets—the largest in the neighborhood though not in the entire city—the housewife has nearly a quarter acre of sales area to wander through.

The store offers a wide variety of fresh meat items—83 different cuts on display. Also, there are 69 different frozen vegetable items, and, of course, a variety of fresh vegetables, fresh and frozen fruit, and dairy and bakery products from which to choose.

The housewife's trip to the store is made pleasanter by many conveniences — from shopping carts to air conditioning to automatic doors. The store cashes checks for her, provides a scale for her to weigh purchases of fresh fruits and vegetables, and has a clerk available to carry the groceries to her car in the parking lot.

Packaged meats are another service. Almost all the meat in the store is packaged, either by the store itself or by its suppliers. Most packages are marked with the total weight of the meat, the price per pound and total price.

Shopping for a family of four, our typical homemaker might well have spent $32.11 for her week's market basket of food. The figure covers all the food for the week. But there won't be any extra food delivered to

the house, or guests to feed, or meals away from home. And there are no nonfood items in the grocery cart.

The other supermarkets in the neighborhood are similar in size and offer much the same items and services. They also compare favorably in price.

If the housewife shops exclusively in any one of the other six supermarkets scattered throughout Greensboro, the same market basket would cost between $31.80 and $32.13 a week. In the Burlington supermarkets, the range is slightly wider, from $31.43 to $32.29.

The widest range in the cost of this market basket is found among the superettes. Over the three-month study period, the cost of the market basket averaged from $31.67 to a high of $35.45 for the superettes included in this comparison of prices. *(36)*

WEEKEND SALES MAKE CENTS

Though a week's food supply for a family of four costs an average of $32.11 over a three-month period, it varied somewhat from month to month.

In September 1962, for example, the market basket averaged $33.04 a week. One month later, the cost of the identical market basket was $1.13 less. By November it had dropped another 51 cents. Prices do change, and not always by rising. Lower prices for meat and some vegetables were responsible for most of these differences.

If the housewife has her eye on prices and wants to cut the cost further, she can do it by shopping around.

By looking for the lowest priced brands, the housewife could have bought the same foods, in the same store, on one Friday during the study for $2.10 less. And, if she had concentrated on the lowest priced items in all stores in the neighborhood, this would have lowered the cost around 10 per cent over the three months, bringing it down to a weekly average of $28.84 instead of $32.11. The difference, by the end of the year, could have put the housewife well on her way to the purchase of a new washing machine or a dishwasher.

She would have had her savings and still have had the same types of foods, though brands and quality may have varied.

The housewife could have ended her bargain hunt right in her own neighborhood. Stores in other parts of the city might offer lower prices on some items, but these differences in cost were slight. *(36)*

THE NUMBERS GAME

WHAT DOES FOOD COST? There are many ways to measure how much of our income goes for food. So many, in fact, they sometimes seem to contradict each other. Basically they all say the same thing. The main difference is their starting point. Here are three of the most commonly used—and misused—measures of our food costs. *(36)*

16.3%

Share of total income per person spent for food in 1963. Total income is income before taxes. By comparison, in 1953 we spent 19.6 per cent on food.

18.8%

Share of disposable income per person spent for food in 1963 is our take-home pay, after taxes. In 1953 we spent 22.4 per cent on food.

20.2%

Share of consumer expenditures per person spent for food in 1963. Consumer expenditures are our day to day living costs. In 1953 we spent 24.3 per cent on food.

Food Budget	THE WAY WE SPEND OUR FOOD MONEY											Total Market Basket
	Milk, milk products	Meat, poultry, fish	Eggs	Dry beans peas, nuts	Flour, cereals, bakery products	White potatoes	Citrus fruit, tomatoes	Other vegetables and fruit	Fats and oils	Sugars, sweets	Accessories	
						Dollars[1]						Dollars
Low-cost[2]	4.34	5.44	.97	.32	2.91	.52	1.02	2.93	.81	.52	.75	20.53
Moderate-cost	**5.57**	**11.80**	**1.20**	**.24**	**3.43**	**.72**	**1.56**	**4.86**	**.89**	**.80**	**1.04**	**32.11**
						Quantities[3]						Quantities[3]
Low-cost	17.5	29.0	23.0	1.75	14.0	7.25	7.5	21.25	2.62	3.0	—	—
Moderate-cost	**19.5**	**16.75**	**27.0**	**.75**	**11.0**	**8.5**	**10.0**	**25.25**	**2.75**	**3.88**	—	—
						Per cent						Per cent
Low-cost	21	26	5	2	14	2	5	15	4	2	4	100
Moderate-cost	**17**	**37**	**4**	**1**	**11**	**2**	**5**	**15**	**3**	**2**	**3**	**100**

1 Based on average prices, three months, 1962, in one supermarket, Greensboro, North Carolina. Market basket for a family of four, woman and man 20-34 years old, boy 10 and girl eight years of age. Quantities in market basket are from Family Food Plans and Food Costs, Home Economics Research Report No. 20, 1962. Prices of the same items were used in figuring the cost of each of these budgets. Cost variations among plans shown are due to differences in the quantities of these items included in each. 2The low-cost plan was adapted to food habits of families in the Southeast. 3 All quantities in lbs. except milk (qts.) and eggs (No.).

WHERE THE MONEY GOES

Where did the food money go? The figures collected by the specialists give us the breakdown for the study period. Prices of about 90 items in 1962 were used with moderate-cost food plan quantities.

Meat, poultry, fish and eggs took the biggest share—$13, or about 40 per cent of the food dollar. This buys some steaks, roasts and ground beef as well as pork chops, bacon, franks luncheon meats, chicken and fish.

Vegetables and fruit added the next biggest amount to the family's food bill. Citrus fruit—oranges, lemons, orange juice—tomatoes and all the other fruits and vegetables, including dried kinds, cost $7.38, or 23 per cent of the total bill.

Milk, cheese, ice cream and other dairy products together cost $5.57.

Flour, cereals and baked goods came to $3.43.

Foods like margarine, butter and salad dressings cost 89 cents. Sugar, marmalade or jellies and dessert mixes added 80 cents to the bill.

The rest of the bill—$1.04—was for coffee for adults and for some soft drinks, seasonings and the like.

The total was $32.11. It covered all the food needs of the hypothetical family of four for one week.

It is however, more than likely that the cash register taps would have added to a higher total, even if the family's shopping pattern fell into line with the averages. Studies across the country indicate that such non-food items as paper towels and toilet articles, soaps and cleansers, pet foods and cigarettes add an average of 20 per cent to the total expenditure within the store.

Then, too, a housewife generally buys enough of such staples as sugar to last her more than a week. Also she may not buy her wek's groceries all at one time, and may have milk and other dairy products delivered to her door.

If most of the lunches are eaten away from home, the bill at the grocery store will be lower. If company is coming, the bill is apt to be higher.

If the family needs to live within a smaller food budget than this moderate-cost plan, the housewife could buy the same items and still cut her bill by a third or more. She could do it by changing the quantities of the different foods purchased—not so much meat, for example, and less expensive cuts; more of the fruits and vegtables that are in plentiful supply; and more of the filling and less expensive cereal products.

Her meals wouldn't be as fancy and they probably would call for more time and effort in the kitchen. But they still could be completely adequate for the family's nutritional needs. *(36)*

GROWING UP WITH THE FOOD BILL: Even with no rise in the price of food, or no more expensive foods in the market basket, the food bill is bound to grow along with the family. This is what it would cost to feed a family for one week, using prices observed in one store during the fall of 1962 in North Carolina. The costs are based on USDA's moderate-level food plan. There is no change in the quality of food purchased as the family grows up; only the quantity is changed. The bill for a week's supply of food bought at the grocery store could be 10 per cent less if the housewife looked for the food specials in her shopping area. And it could be a third less if she were working within a low-income food budget. *(36)*

FOOD BILL GROWS UP TOO

Family food bill going up? The size of your family and how old the children are may have a lot to do with it.

Here's the way a moderate-cost food budget could grow up with a family, even if food prices never changed and the family didn't switch to different or more expensive foods. The prices come from the Greensboro-Burlington study.

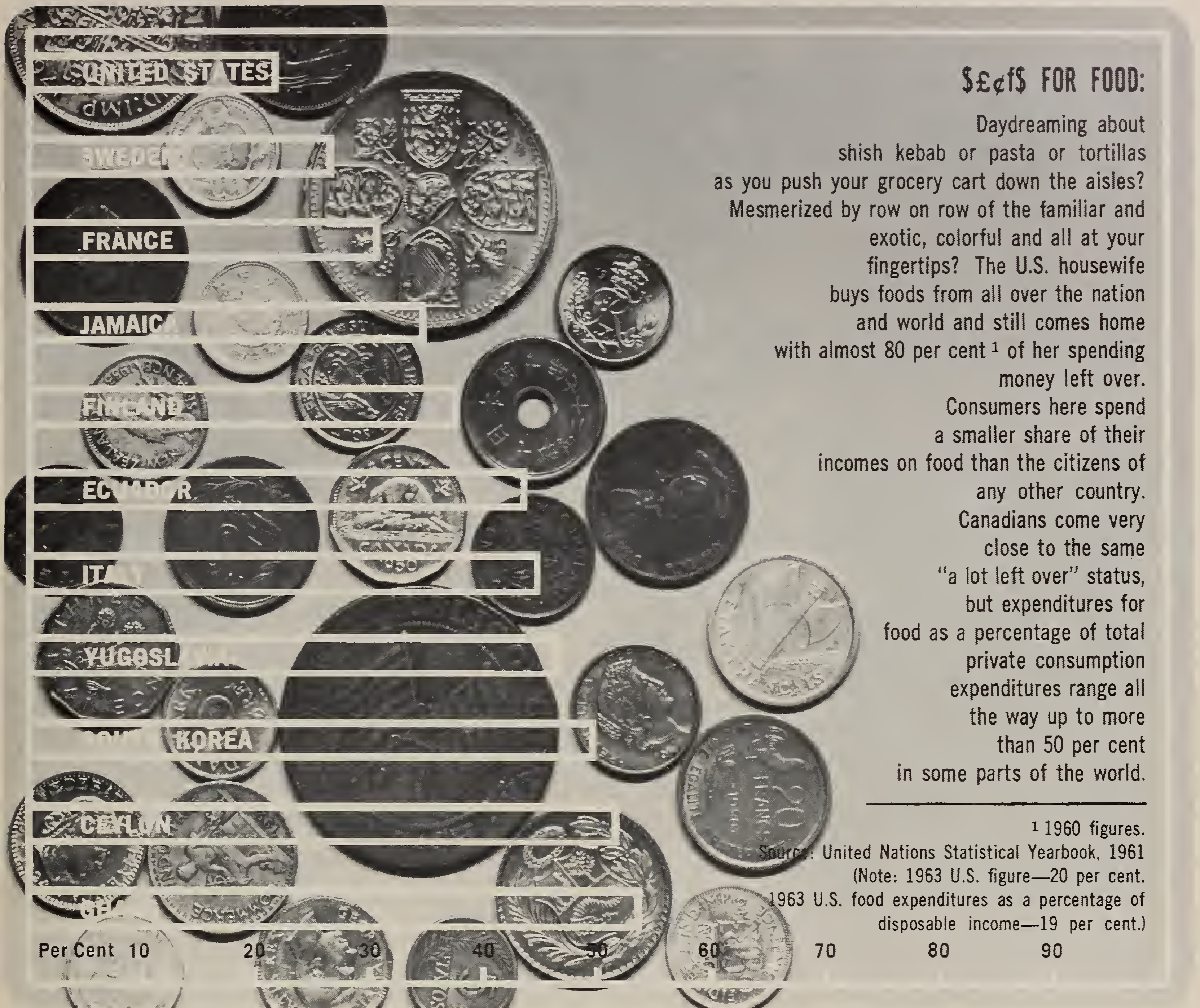
When the couple is first married, their food would cost them about $19 a week.

When they have their first child—a boy—the food cost goes up a little more than $3. The next child—a girl—will add again to the food bill.

From then on until the children reach their teens, the increase in the cost of the week's market basket is fairly gradual. But by the time the boy becomes a teenager, the cost may have increased by nearly 75 per cent, compared with the bill before the couple had any children.

The cost of food will be at its highest when the boy is around 18, just before he leaves home. With two children in their upper teens, the weekly cost will be around $36, nearly double what it was when the couple were first married. There are more people to feed, and nothing can match the appetite of a hungry teenager, especially a teen-age boy.

As soon as the boy leaves home, the total cost drops by nearly $10 a week. And when the daughter leaves home, it



drops another $8.

When the middle-aged housewife begins to shop for only two again, food costs her about $18 a week—less than it has cost since before her marriage. It will drop again by another dollar or so as the husband and wife grow older and require less food.

It is, however, less than likely that a real family could exactly match its food bill with these figures. For one thing, the price of food will vary over the years. But if the past decade can be used as an example, changes in prices are not nearly as great as the increase in the volume of food the family carts home from the store while the children are growing up. Since 1953, the price of food at the grocery store has risen by an average of 7 per cent.

Then, too, with four mouths to feed, instead of two, the housewife might well change her purchases to less expensive foods to help keep the total down.

Or an older couple might begin eating more steak, smaller amounts of the less expensive cuts. They might buy more out-of-season fruits and vegetables or go in for gourmet items. And they might indulge themselves by eating more than they need or even should have for the best of health.

With any of these changes, the older couple wouldn't see a dramatic reduction in their food bill after their children left home.

Life in a real family could play havoc with these average figures in other ways, too. If there were four teen-age boys in the family the weekly food bill could easily soar to over $50. And more children would probably mean more young friends to raid the refrigerator—and boost the food bill. *(36)*

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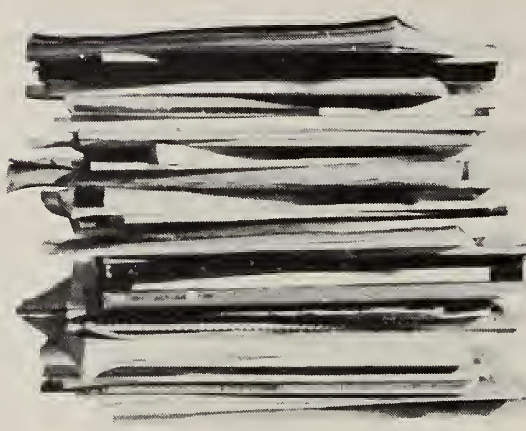

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PILOT FOOD STAMP PROGRAM: IMPACT ON RETAIL FOOD STORE SALES IN AVOYELLES PARISH, LA. N. Havas, Marketing Economics Division. AER-55.

The introduction of the Food Stamp Program boosted sales of retail food stores in the area by 7 per cent, according to this study, which compared food sales in sample stores before and after the initiation of the program. (See p. 22, this issue.)

HOUSEHOLD CONSUMERS' ACCEPTANCE OF INSTANT SWEETPOTATO FLAKES. D.S. Hollon, Standards and Research Division, Statistical Reporting Service. MRR-663.

Virginia homemakers found a new form of canned, cooked, dehydrated sweetpotato flakes tasty and "very easy and quick to prepare."

RETAIL SALES OF BROILERS AND MEAT AS AFFECTED BY PRICE, DISPLAY AREA, AND NEWSPAPER ADVERTISING. S.E. Brown, Marketing Economics Division. ERS-180.

Changes in display area, price, newspaper advertising and total store volume accounted for 75 per cent of the variation in broiler sales during a six-week test period. (See p. 18, this issue.)

ECONOMIC POTENTIAL OF SOAPS, DETERGENTS, AND SURFACTANTS MADE FROM FATS AND OILS. F. J. Poats, Marketing Economics Division, and H. C. Speel of H. E. Bode Associates, Chicago, Ill. AER-53.

Surfactants (surface-active agents) are marketed in many forms and in many products, but mainly as soaps and synthetic detergents. This report describes the kinds of surfactants being marketed, the role of fats and oils in their production, and the likely role of fats and oils in the products of the future.

FOR-HIRE TRUCKING OF EXEMPT FARM PRODUCTS—OPERATING PRACTICES AND NATURE OF COMPETITION. B. H. Wright, Marketing Economics Division. MRR-649.

This report covers source of loads, methods by which rates are established, principal sources of competition, operating costs, trip-leasing, and type and amount of equipment used in for-hire carrying of exempt farm products. (See May 1964 Farm INDEX.)

THE GREAT LAKES TART CHERRY INDUSTRY: PRODUCTION COSTS. C. C. Dennis, Marketing Economics Division, B. A. Dominick, New York Agricultural Experiment Station, and B. W. Kelly, Pennsylvania Agricultural Experiment Station, in cooperation with the Michigan Agricultural Experiment Station. ERS-171.

Michigan has become the major tart cherry state, producing more than 60 per cent of the crop in most years. (See July 1964 Farm INDEX.)

LABOR USED TO PRODUCE VEGETABLES—ESTIMATES BY STATES, 1959. E. E. Gavett, Farm Production Economics Division. Statis. Bul. 341.

The production of vegetables in the United States, from a labor viewpoint, is probably the most critical of all farm industries. (See p. 5, this issue.)

LABOR USED TO PRODUCE FIELD CROPS — ESTIMATES BY STATES. R. C. McElroy, R. W. Hecht and E. E. Gavett, Farm Production Economics Division. Statis. Bul. 346.

Man-hours of labor used per acre have declined for nearly all field crops. During 1953-63, the decrease in total labor was about 2.2 billion man-hours. (See June 1964 Farm INDEX.)

1964 REVENUE ACT—PROVISIONS OF SIGNIFICANCE TO FARMERS. H. Shapiro, Farm Production Economics Division. ERS-165.

This booklet describes some of the provisions of the 1964 Revenue Act that will particularly affect farmers' tax liabilities and after-tax incomes. (See p. 14, this issue.)

FARM PERSONAL PROPERTY TAXES, 1957-62. H. Shapiro, Farm Production Economics Division. ERS-176.

This report provides estimates by states and by components of the farmers' personal property taxes and describes the methods used in estimating these taxes.

FINANCIAL PROCEDURES UNDER PUBLIC LAW 480: EMPHASIS ON TITLES I AND IV OF THE AGRICULTURAL TRADE DEVELOPMENT AND ASSISTANCE ACT. J. P. Bogumill and O. H. Goolsby, Development and Trade Analysis Division. FAER-17.

The financial procedures used in transactions under Titles I and IV are quite complex. This report places special emphasis on the international financial procedures employed in these programs and on the fiscal movement and accounting of U.S.-owned foreign currencies in the U.S. Treasury. (See July 1964 Farm INDEX.)

PUBLIC LAW 480 AND OTHER ECONOMIC ASSISTANCE TO UNITED ARAB REPUBLIC (EGYPT). H. D. Umstott, Development and Trade Analysis Division. ERS-For. 83.

The planned and actual uses of local currencies generated from Title I sales to the UAR are discussed in relation to the total U.S. economic aid programs. (See April 1964 Farm INDEX.)

TRENDS AND DEVELOPMENTS IN JAPAN'S ECONOMY AFFECTING THE MARKET FOR U.S. FARM PRODUCTS, 1950-62. H. H. Spurlock, Foreign Regional Analysis Division. FAER-16.

The outlook for the sale of farm products to Japan over the next decade is generally considered excellent. (See May 1964 Farm INDEX.)

NON-LINEAR FORMULATIONS OF SPATIAL EQUILIBRIUM MODELS AND METHODS FOR OBTAINING SOLUTIONS. T. Takayama and G. G. Judge, Illinois Agricultural Experiment Station, in cooperation with Farm Production Economics Division. Ill. Agr. Expt. Sta. AER-66.

This report reviews the general mathematical structure of non-linear programming problems and the class of gradient methods for their solution. A quadratic spatial equilibrium model is specified and the properties of alternative methods for obtaining a solution are reviewed and discussed.

LIQUID PETROLEUM FUEL USED BY FARMERS IN 1959—AND RELATED DATA. P. E. Strickler, Farm Production Economics Division. Statis. Bul. 344.

The amount of liquid petroleum fuel purchased per farm in 1959 was larger than ever before; however, the total quantity purchased declined. (See May 1964 Farm INDEX.)

COMPARISON OF MECHANICALLY DRAWN SAMPLES WITH CUT SAMPLES FOR EVALUATING COTTON QUALITY. C. C. Cable, Jr. and Z. M. Looney, Marketing Economics Division, and H. R. Smith, Agricultural Marketing Service. MRR-654.

On the average, mechanical samples drawn during ginning are just about as reliable for merchandising purposes as cut samples taken after ginning. (See July 1964 Farm INDEX.)

SOME EFFECTS OF GIN DRYING AND CLEANING OF COTTON ON FIBER LENGTH DISTRIBUTION AND YARN QUALITY. J. E. Ross, ERS, and E. H. Shanklin, Agricultural Marketing Service. MRR-666.

This report presents the results of tests to determine the effect of gin drying and tandem or double lint cleaning, separately and in combination, upon both the long and short fiber segments and upon yarn quality.

RECLAIMING AND MARKETING COTTON GIN MOTES. S. H. Holder and Z. M. Looney, Marketing Economics Division. ERS-168.

Cotton gin operators may increase their income by reclaiming gin motes.

Sources for this issue:

1. E. E. Gavett, Labor Used to Produce Vegetables—Estimates by States, 1959, SB-341 (P); 2. E. E. Gavett, Truck Crop Production Practices—San Joaquin, California, ERS-166 (M), Marion County, Oregon, ERS-169 (M), Yakima County, Washington, ERS-172 (M); 3. B. H. Pubols, U.S. Fruit and Vegetable Trends and Prospects (S); 4. P. E. Rosenberry, Costs and Returns: Commercial Corn Belt Farms, 1963 (M); 5. Changes in Farm Production and Efficiency—1964, SB-233 (P); 6. R. R. Botts, Farmers' Handbook of Financial Calculations and Physical Measurements, AH-230 (P); 7. V. M. Davis, Sharing Costs of Field Shelling, Drying and Storing Corn (S); 8. V. M. Davis, Costs of Storing Corn on Farms (S); 9. R. H. Miller, "Developments in Canadian Dairying, 1962-63," Dairy Situa., DS-299 (P); 10. W. W. Pawson, Emerging Patterns of Feedlot Management in the Southwest, and Interregional Competition in the Location of Cattle Feeding (S); 11. Farm Costs and Returns: Commercial Farms by Type, Size, and Location, ATB-230, Revised June 1964 (M); 12. F. L. Garlock, Farm-Mortgage Lending Experience, October-December 1963 (M); 13. G. B. Crowe, Changes in Technology as They Affect Cotton Production Costs (S); 14. C. C. Boykin, Cattle Ranch Adjustments to Drought in the Southern Plains (S); 15. R. W. Harrison, The Humphreys and Abbot Report on "The Physics and Hydraulics of the Mississippi River, 1861 (M); 16. H. A. Steele, Water Resources as a Limiting Factor in Economic Growth (S); 17. H. A. Steele, Economic Research Needs Related to Natural Resources (S); 18. H. A. Steele, Watershed Program Evaluation, Honey Creek, Iowa (M); 19. M. R. Janssen and H. N. Rude (SM); 20. H. Shapiro, 1964 Revenue Act—Provisions of Significance to Farmers, ERS-165 (P); 21. F. J. Rafeld and J. R. Tompkin (SM); 22. W. W. Bauder (SM); 23. R. E. Freeman, The Changing Picture in Federal Milk Market Orders (S); 24. F. Scott, Food Costs—Retail Prices, Farm Prices, Marketing Spreads (M); 25. S. E. Brown, Retail Sales of Broilers and Meat as Affected by Price, Display Area, and Newspaper Advertising, ERS-180 (P); 26. S. A. Gazelle, "Marine Oils: Recent Trends in U.S. Production, Use, and Price," Fats and Oils Situa., FOS-223 (P); 27. B. H. Pubols, "Processed Noncitrus Fruit," Fruit Situa., TFS-151 (P); 28. W. A. Schlegel, Agricultural Development in Spain and Competition with United States Farm Exports, FAER (M); 29. M. Kriesberg, The Three Markets of Latin American Countries (M); 30. D. Rahe, "U.S. Agricultural Exports Reach Alltime High of $6 Billion in Fiscal Year 1963-64," For. Agr. Trade, July '64 (P); 31. P. O'Donnell and Foreign Regional Analysis Division (SM); 32. N. Havas, Pilot Food Stamp Program—Impact on Retail Food Store Sales in Avoyelles Parish, La., AER-55 (P); 33. E. J. McGrath, Distribution Patterns of Rice in the United States, ERS-186 (P); 34 L. Clayton, Opportunities for the Wurlan Process in All-Wool Apparel (S); 35. D. B. Agnew, "Meatpackers' Costs for Slaughtering Hogs and Distributing Fresh Pork," Mktg. and Trans. Situa., MTS-152 (P); 36. R. Lifquist (SM); 37. Statistical Reporting Service, Mohair Production and Value—1963, Mar. 19, 1964 (P).

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QUALITY OF RURAL AND URBAN HOUSING IN THE APPALACHIAN REGION. A. L. Pavlick and R. I. Coltrane, Resource Development Economics Division. AER-52.

Housing in the Appalachian Region is generally inferior to housing in the surrounding areas. (See May 1964 Farm INDEX.)

IMPACT OF NEW INDUSTRY ON AN IOWA RURAL COMMUNITY—PART I. FARMING AND FARM LIVING. D. R. Kaldor, W. W. Bauder and M. W. Trautwein, Iowa Agricultural Experiment Station. Iowa Agr. Expt. Sta. Spec. Rpt. 37.

Employment opportunities in a new industry prompted a substantial increase in part-time farming as operators and wives took jobs in the plant. Family income rose because the industry permitted fuller utilization of family labor.

INCOME DIFFERENCES OF RURAL PEOPLE IN THE UPPER EAST TENNESSEE VALLEY. H. A. Henderson, formerly with Resource Development Economics Division. Tenn. Agr. Expt. Sta. Bul. 365.

Households with low incomes generally had a higher percentage of persons who were younger or older than those who normally work at nonfarm jobs; had incomes from either farm or nonfarm sources but not both; or had only a few years of education.

THE FARM INDEX

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